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ABSTRACT

This manual was developed for those interested in promoting change to improve health conditions of their communities. Parts I and II focus on fundamental health education processes and discuss techniques and approaches for working with community members to plan and develop programs that are responsive to the community's expressed needs and goals. Part III presents another aspect of educational programs, that of transmitting information about health topics. This section includes specific reference materials on selected health topics relevant to developing countries, and it also discusses methods and aids for presenting such information to individuals or groups. Part IV deals with four common community health problems: nutrition; maternal and child health; control of communicable diseases; and accidents--preventing and meeting emergencies. Six appendices are also included: (1) a discussion of how to construct a sample survey for the population; (2) examples of survey questions; (3) examples of six kinds of educational materials and aids; (4) a bibliography of sources of materials and information; (5) a vocabulary of words used in the manual; and (6) five preliminary guidelines regarding immunizations and health education. (JMK)

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COMMUNITY HEALTH EDUCATION

IN DEVELOPING COUNTRIES

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FOREWORD

ABOUT THIS MANUAL...

Health education can mean so many different things that it would be surprising to find a reader whose expectations are fully met. The diversity of educational needs is made even greater by the variations in environmental, cultural, and public health patterns found throughout the world. Still, we are hopeful that this manual will contain ideas which can be modified and applied in helping you get started in community health education.

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Community Health Education in Developing Countries was prepared for the Peace Corps by the American Public Health Association. The ideas and publications of many people were drawn upon, and recognition has been given wherever possible. APHA Consultants Pam J. Straley, R.N., and Uyen Ngoc Luong, M.P.H., were the principle writers. Working with skill and dedication, Ms. Straley and Ms. Luong effectively pooled their

respective experiences as a Peace Corps Volunteer in Nicaragua and as a health educator in Vietnam and Mauritius so as to ensure that their product would be realistic and practical. Appreciation is also due to Brian A. Flynn, whose work as editor reflects his training as a health educator and his experiences as a Peace Corps Volunteer in India.

Many other people graciously contributed their time and skill in the development and review of the manual, including:

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COMMUNITY HEALTH EDUCATION IN DEVELOPING COUNTRIES

ERRATA & CLARIFICATION

pp. 36-38	Correct spelling - "diphtheria"
p. 66	Suggest particular emphasis be given to study of local sources of Vitamin A as such deficiencies are very common and serious.
p. 77	Last line: Use drops 1% silver nitrate ophthalmic solution for eyes at birth. Substitute - ophthalmic penicillin. Check with local medical authorities.
p. 99	"Control of Household Pests"....not Pets
p. 113	Last sentence re preventing tetanus: In most cases series of tetanus immunizations required rather than simply booster. Boosters used for those previously immunized.
p. 118	After point #4, should read, "In some cases, artificial respiration may save a <u>life</u>, but it must be started promptly.
p. 161	"yucca" illustration should read "yuca" - root of cassava or manioc.

INTRODUCTION

Are your neighbors suffering from diseases which could be prevented? Do you know children who are clearly malnourished even though nutritious foods can be found or grown? Do you see babies fed on over-diluted powdered milk made with unsafe water?

Community Health Education in Developing Countries was developed for those persons, from whatever backgrounds, who are interested in promoting change to improve the health conditions of their communities. You may be a teacher, a community agriculture extension worker, a social worker or a well driller. This manual is a guide -- a working and teaching tool -- to help you get started on a community health project through health education.

Health education is a process through which behavior changes are effected. Health problems are rooted in specific behaviors: changing those behaviors will change a community's health status.

There are two key elements in health education. First, health education involves community problem-solving. Behavior change will probably not occur in programs designed by outside planners; rather, it depends on the direct and ongoing involvement of the community. Community members must identify their needs, define their problems, participate in identifying program goals, priorities and methods, and share in the development of program resources and activities. This community involvement is the foundation for an effective program.

Second, health education involves community systems. Health problems in developing countries are caused by a complex interplay of many factors. The most immediately apparent may be a lack of information about illness and how health can be protected, a lack of appropriate health services, poor sanitation, malnutrition, and poverty. A health education program must incorporate these and all the other interrelated factors that contribute to the particularhealth problem addressed. Nor can a program be limited to those individuals whose behavior is to be changed. It must also include those friends, family, community opinion leaders and/or institutions that influence the individual's decision to behave in a certain way. For example, a program to stop smoking among teenagers should be directed not only at the individual teen smokers but also at the teen's peer group that exerts pressure to smoke, at the teen's parents who may encourage smoking by their own smoking habits, at advertising agencies that portray smoking as glamorous, at the stores that make cigarettes available to minors, at the social and recreational activities that may foster smoking, etc. In sum, a health education program must incorporate and work with all relevant community systems.

Your role in the health education process will change according to the task at hand. You may be a catalyst initiating awareness of and desire to act on a problem; you may organize a group to address a problem; you may lead group discussions; you may assist people in learning problem-solving skills; you may help locate and mobilize resources; you may teach skills specific to a project. You may be able to develop inter-disciplinary teams -- extension workers, school teachers, health clinic personnel to work on shared problems. Since health problems are integrally related to broader community development issues, work in one sector impacts on all. A team approach can multiply the resources available to a community project as well as establish mutually reinforcing programs of community development and behavior change.

This manual was designed to help you fulfill these varied roles. Parts I and II focus on fundamental health education processes: these sections discuss techniques and approaches for working with community members to plan and develop programs that are responsive to the community's expressed needs and goals.

Part III of the manual presents another aspect of educational programs, that of transmitting information about health topics. This part of the manual includes specific reference material on selected health topics relevant to most developing countries. It also discusses methods and aids for presenting such information to individuals or groups.

It is important to remember that information by itself is not education. We need only to think of the anti-smoking campaigns in the United States. A warning on the cigarette packages gives all smokers the information that smoking is hazardous to their health, but that information alone has clearly not stopped all smoking. Providing information is a necessary tool in any program, but it is only a part of education. The central concern of health education is behavior change. Methods presented in Part III of the manual must be combined with those educational processes discussed in Parts I and II.

The manual is not intended to be a complete reference book for all diseases, health programs or methods. Rather it discusses some of the more central issues which you will want to consider as you begin your health work. At the same time, it provides a selection of technical information and references to other sources which may prove useful to you.

It is hoped that the approaches suggested here will lead to improved community health in the broadest possible sense of the term.

PART I

HELPING A COMMUNITY START A HEALTH PROJECT

CHAPTER I

KNOWING THE COMMUNITY

The success which you achieve in assisting families and communities in making changes in their lives to protect their health will be very much influenced by how well you know this community, and its resources, traditions and attitudes. While there can be no substitute for spending time in the community and getting to know the people personally, there are ways of using this time efficiently by having a clear idea of what information may be important and ways in which it can be obtained.

Your Role in the Community

Take some time to think through the implications of what you are attempting. Whose program is this? Yours? Your government's? Some agency's or the community's? Whose responsibility is it to define programs, set goals, carry out the work and evaluate the results? What might be the impact of the project on communities in other regions and countries and what kind of records will be needed to ensure that others can learn from the program's successes and failures?

What qualities do you need to bring with you to ensure that you are accepted as being a trustworthy friend of the community? These should include a willingness to listen, understand and accept the viewpoint of the people. For this reason, much of this Chapter is directed to ways of learning about the problems of the community rather than ways of helping people to change.

At the beginning of any effort to improve the conditions of life in a community, the leaders of the community should be contacted to enlist their support for the efforts you will help initiate. When entering the community to start work, you should ask a member of your staff or your supervisor to accompany you to make it clear that you have the support of a respected organization. First visit the local community leader(s) who might be a mayor, the chief of the village or a religious leader. Then, within the first two or three days, visit other formal leaders such as the principal of the school, members of the community council, assistant headman, chiefs of various organizations, and other community extension workers. These leaders can be essential to acceptance of you by the community. They can also be very helpful sources of information about the community. For further discussion of the role of community leaders in organization of a community project see Chapter II.

COMMUNITY INFORMATION WHICH MAY BE HELPFUL

Following are some types of information which may be helpful, in understanding the community and its health problems. You don't have to gather *all* the information mentioned. Depending on the community's needs and the health problems, you may have to know more about one topic than another.

In any case, be sure to keep a diary or a brief monthly report of what you learn so that other extension workers can benefit from your efforts.

1. *The community and its general physical characteristics:* Your efforts in health education must be based on a clear understanding of the community and its resources. Take the time to explore the area and take note of its general physical features. How big is the community? What kind of crops, food, natural resources exist? What are the transportation routes? It may be helpful to make a map on which you should also mention any human-made work such as schools, religious institutions, markets, recreational facilities, health facilities, and other public services.

2. *Information on the number of people and their characteristics:*

   a. How many people live in the area?

   b. How many of each sex and of each age group?

   c. What is the average size of a household?

   d. For a woman, what is the average number of pregnancies? The interval between pregnancies? The average number of children alive? The average number of children who have died?

   e. How much education do the adults have?

   f. What kind of educational institutions are available?

   You may be able to gather this information from census materials or official reports. In this case, you may have to determine how correct your information is by comparing statistics gathered from different sources.

3. *Community groups and their impact on the health care system:* As a community extension worker, you have to be aware of the existence of various social groups and the nature of relationships both within and between these groups. You may be able to use those relationships that are positive and learn how to deal with those that may jeopardize the operations of the program.

   Attend district or village council meetings and observe the roles played by different members; note what are the issues and what are the opinions of the leaders. Learn what health-related issues have existed in the past and who was involved in their resolution. It is also useful for you to know how you should relate to people of various positions, what your status in the community is and how you are expected to act in this position.

4. *The communications network:* To reach the people in the community, it is necessary for you to know how information and rumors spread within the community; what the formal and informal channels of communication are; who the participants in these channels are; who the communicators are and how effective they are.

   Learn how various leaders communicate their ideas and opinions and note to what extent their messages are accepted in relation to their status or authority in the community. A good way to gather this information is to observe where people gather and listen to the types of information that is spread. You can also attend meetings,

festivals, and religious gatherings. You can spend time socializing with women in the market or at village wells; or you can ask people to whom they would go for advice on health matters and to whom they feel comfortable giving advice or forwarding news.

If you plan to use the radio or television for your educational campaign, find out how many people own or have access to the use of a radio or television and which program they like and why. Also, find out if newspapers are available and who in the community reads them.

Effective communication between the community and the provider of services can have a great impact on a community health program. There are numerous examples of health programs that failed because of the lack of communication between the staff and the people. In one example, a village chief refused to give his support to a sanitation campaign because he was not informed about the date of the Health Committee meeting in time. In another example the frustration and anger of a mother who came to the Well Baby Clinic expecting free services could have been avoided had there been adequate publicity about clinic services.

Be certain not to underestimate the important formal and informal roles which women play in health-related decision making, as well as in all aspects of community life, including agriculture, marketing, and politics.

5. *The family structure:* An understanding of the family structure, the status of various members of the family and who is involved in the decision-making process within the family on all major decisions as well as those related to health is valuable to your work with the community. Without this knowledge, you may direct your educational activities toward the wrong member of the family. By talking to community members, you may get this kind of information. Ask them if they need the consent of another person in order to follow certain medical treatment or advice. If so, who is this person?

6. *The political structure in the community:* By virtue of your work, you are already somewhat involved in the political life of the community. But you must avoid making assumptions and learn how things really work: you should explore the basis for leadership and power within the community (See Chapter II).

   For the success of a community program, you should also seek the support of private groups or institutions which serve the community. Learn about their organization and the kind of activities in which they are involved. Find out if they have been involved in health issues and what they have done. What are they doing now? Can you work together?

7. *The economy and its impact on health:* The health of the individual and the community will be influenced by economic conditions. Economic resources may also be needed to support health changes. So you will want to know about businesses, industries and agricultural conditions, unemployment, family debts, and how the land is distributed. This information will increase your knowledge of what is important to the people and what resources are available to them.

8. *Religion and its impact on health:* Religion may have a great influence on the lifestyle of the community including the health practices and beliefs of individuals. A mother may believe that her child is sick because it is GOD's desire, or a community may be strongly opposed to a well-digging program because the work may disturb the soul of the divinities who protect the village.

   It is important, therefore, for you to know who the major religious groups in the community are, who their leaders are, and what role they play in community life. To avoid raising antagonism because you are working more closely with one group than with another, find out if conflicts exist between these groups and if not, what level of cooperation can be expected.

   Religious groups may sometimes manage their own health programs, their priorities and interests. It may also be useful to find out what the attitudes of the government and community residents are toward those religious-affiliated programs and the reasons for program success or failure.

9. *Health beliefs and practices:* How people define "good health" and "disease" can be different from the way you do. But their views can be just as valid and should be explored. Some people may believe that prevention of illness is impossible, or very difficult; others may value only a particular method. You should sort out practices which are beneficial to health from those which have no effect on health or those which are harmful. As Maurice King suggests, "it is their effect on health that matters, not their strangeness to the observer nor their remoteness to his own culture." [1]You may need to know prevailing beliefs about health, nutrition, maternal and child care, and environmental sanitation:

10. *Health and prevention of illness*

    a. What are people's beliefs regarding good health and prevention of disease? Do they feel it is possible, and how can it be achieved?

    b. What methods are used to help maintain their health?

    c. What are people's attitudes towards vaccinations and various tests (like blood tests for malaria) and other preventive measures (such as control of flies, insecticide spraying)?

11. *Hygiene*

    a. What are local attitudes and practices regarding personal hygiene?

    b. How do living conditions and available resources influence habits of personal hygiene?

1/ Maurice King, *Medical Care in Developing Countries*, Nairobi, Oxford University Press, 1966.

c. What would be the reaction of the community toward possible change in hygienic practices (such as the introduction of water-sealed toilets or drinking protected water)?

12. *Diseases*

a. What are the most common diseases in the community?

b. What are the general beliefs regarding the cause, prevention and treatment of each of them?

c. What diseases are the people most concerned about?

d. Who makes decisions about seeking treatment for a sick person? Who do people go to for advice on health matters? Where do they go to for treatment?

13. *Nutrition*

a. Are there special beliefs concerning food? For example, are certain foods considered too "hot" and not to be eaten if one has fever? Are other foods not good for a pregnant woman?

b. What techniques are used to conserve foods?

c. What are the family eating practices? For example, in certain areas the mother, even if she is pregnant, may be the last person to eat, thus explaining her poor nutritional condition.

14. *Maternal and child nutrition*

a. What foods do women eat during pregnancy? Do they follow a certain diet?

b. How often and how long do mothers breast feed? Are they interested in avoiding pregnancy during breast feeding?

c. At what age do babies start eating foods other than mother's milk or formula? What do they eat?

d. When children are sick, are they given a special diet? Of what does it consists? When they have diarrhea, are additional fluids given to replace the losses?

15. *Maternal and child care*

a. During pregnancy are certain conditions considered dangerous?

b. Where do most women give birth? Who assists in delivery?

c. What methods are used to cut the umbilical cord.

d. Do women follow special practices after delivery? For example, is the practice to stay in bed near an open fire for several months, or to stay indoors avoiding light and fresh air.

e. Who usually takes care of the baby if the mother works outside the home?

16. *Environmental sanitation*

a. What kind of sources of water are used? Are they protected?

b. Do people have safe drinking water?

c. Where do people go for defecation and urination? Do they know that certain diseases may be contracted through human feces?

d. Are human and animal wastes used as fertilizer?

e. Do people understand that certain diseases can be prevented through improved environmental conditions?

f. Are there any problems with pests?

Techniques for Gathering Information

There are informal and formal ways to gather information. Informal ways include: observing and talking to people; and reading reports, official documents and newspapers. Formal ways include asking a set of fixed questions and recording answers on a form; all members of the village or only members of a selected representative group of people are asked. Both informal and formal approaches have their advantages and disadvantages. The key issue for you is to be clear to yourself and the community why this information is needed and how it will serve the people. Ask yourself how members of the community can be a part of the information gathering process.

Informal Fact-Finding

Informal fact-finding is not only easier, but it also helps build relationships between you and community members. It starts the first day you enter the community and continues until the day you leave. Some ways to gather information informally were mentioned above. The following are further suggestions:

1. Get to know the informal leaders and those considered as "wise" in the community.

2. Talk with the ordinary people over a cup of tea or at social gatherings. You might ask a few basic questions:

"What are some of the important things which have happened in this community in times past."

"What are the greatest problems here?"

"What are their causes?"

"What has been done to correct them, and how much has been done?"

"Who has helped?"

Their answers will help you to understand the life style of the community, what beliefs and practices are attached to health, who the leaders are, and what problems exist in the community. Note that what you think needs to be done may be quite different from what the tradition-minded community members think needs to be done.

For example, if you ask a knowledgeable person: "What are the public services that you believe the community needs most?", he may mention something outside the health field; give him a sympathetic hearing. Say that you will ask the provincial or district health officer to talk to the provincial official who is concerned with that matter. Then be more specific and ask him. "Do you think that there are any problems with the health of the community that ought to be solved?" Suppose that he does not raise the subject of water supply (wells) which you think is a serious and a solvable problem. In such a case, you could raise the question of wells yourself to see if he believes it is a problem; the conversation might be like this:

You — Do you believe that the community has a problem with water supply?

Villager — Yes, our wells are always silting up and having to be re-dug, which is a real inconvenience.

You — Do you think something can be done about this?

Villager — Yes, but we need some equipment and have to case the wells with concrete rings.

You — Suppose I were able to arrange to get help with this. Do you think the villagers would be willing to offer their time to put in the rings?

Villager — Yes, I think so.

You — I will be glad to think about it. Let me talk it over with the district health officer.

Note that you are careful not to commit yourself until you are sure you can keep your promise. Note also that the villager did not raise the problem of wells. Consequently, this matter might not be a deeply felt need on his part. To be sure, check with other villagers to see if they raise the subject. If so, you may be reassured that a well-casing project could have the participation of the community. See the next chapter on organizing, and Chapter III on planning a community project.

3. Talk also with those who criticize the services or facilities existing in the community. This will tell you why programs in the past failed so that you will avoid making the same mistakes.

4. Listen to gossip and stories. Gossip, at times, can be informative and may help you to know more about the true reactions or feelings of the people. You should, however avoid being identified as a person who gossips continually, or who promotes or belongs to a faction.

5. Another way to get information is to ask the people how they would go about solving a specific problem. By asking what they would do in the situation and why, you may learn more about how things work in the community, who does what and why, and who will possibly be your partner or your opponent.

6. Participate in community activities. Don't hesitate to attend social gatherings and other communal activities if you know that you will be welcome. However, don't try to impose your presence if you feel that you are not wanted.

7. Make home visits. Make sure that you fully understand what is acceptable behavior in terms of visiting when the husband or wife is away. Also try to be sensitive to any possible hardships which might be caused by visitors. There have been projects which have been damaged because officials who visited regularly accepted scarce food which the people felt obligated to offer.

8. It is usually valuable to discuss local problems with other community workers such as teachers.

9. Get reliable information. Be sure that the information you get makes sense. That is, the story of one person must coincide with that of another person. It is very important to get information from several sources. You may find out that it is difficult to get the truth. This may be due to several reasons:

    a. People may not trust you yet because you are an outsider and you haven't done anything which proves that you are trustworthy.

    b. You may be asking the wrong people.

    c. People may tell you what they think you want to hear for politeness and precautions. They do not want to show you their true feelings for fear of possible consequences.

    d. In every culture, there is always an ideal and a real aspect of every situation. Your respondent may give an idea to your question while the realistic answer is quite different. If you ask a school administrator about the sanitary conditions of his school, he or she may tell you that the school has sufficient safe drinking water, that latrines and urinals for children are clean, a visit to the school may give you another view of the situation. With these limitations in mind, always try informal research first. Sometimes it is sufficient; sometimes not. It depends on the problem and the type of action you plan to take.

1/ The authors are indebted to Dr. Robert B. Textor, Mr. James C. McCullough, and their Thai public health colleagues for their thoughtful publication, "Manual for the Rural Community Health Worker in Thailand" (Thai-American Audiovisual Service, Bangkok, 1958). Their incorporation of anthropological and health education insights into a manual directed toward village sanitation workers has resulted in a valuable resource in preparing the present manual.

For example, you might ask 10 to 20 women about their diet after delivery and find out that all of them (100%) take only rice and salt. You then probe: "Do you know a nursing mother who has a diet other than rice and salt?," and all reply "No." In such a case you would be wasting your time to do formal research, because you know that the percentage is 100% or nearly so. But if the people said that there were some exceptions (women who came back from the cities, those who were influenced by modern midwives, etc....) and if it were necessary for you to know what this percentage was, then you would need to use the formal method.

Formal Fact-Finding

Formal fact-finding used in health is of two types: mapping and the household survey. Formal fact-finding will serve two purposes:

a. You can learn what the important problems are and plan your approach accordingly. You will also have the basis by which to measure the progress of any activities undertaken.

b. You can find out the health status of individuals and families so as to be in a position to help them.

But don't try to be fancy and waste time making fine maps or compiling statistics that may have no utility.

1. *Mapping:* The map need not be exact, just roughly accurate. Start by drawing in important features such as streets, markets, schools, wells, and ponds. Then put in each house. Use a symbol to represent houses that have no latrine or an unsanitary latrine, wells, animal houses, etc. Use suitable symbols for other aspects of your program. The map is thus a tool to measure progress made and should be displayed in meetings involving community members so that they can be made aware of progress obtained and problems remaining to be solved.

2. *Household survey:* The primary function of a survey is to learn more about the community. The extension worker must take advantage of this opportunity by asking questions and listening. He or she should not attempt to use this as a means of educating respondents; be a good listener, showing respect for the people's beliefs and sympathy for their problems. Opportunities will come later for changing attitudes and practices.

Another reason for carrying out a sample survey at the beginning of a new project is to ensure that you will be able to measure the project's result. You can combine the collection of this baseline data with your effort to use the survey as a means of getting to know the community better. Baseline surveys need to be carefully planned and conducted. It may be worth your efforts to locate a social scientist to assist you.

In Appendices A & B, you will find an example of a health questionnaire which can be used for gathering information about the community and for providing baseline evaluation information for the project; you will also find some suggestions for designing and pretesting a sample survey.

CHAPTER II

HELPING THE PEOPLE TO ORGANIZE

Now that you have some basic information about the community, the next step is to broaden your contact with the leaders of the community. Involve the local leaders as soon as possible in the project. Who are the leaders? Why are they important? How do you find them? What can they do to help?

Who are the leaders?

Anyone in the community may be a leader. A person is a leader when his or her ideas or actions influence others or he/she helps to get things done that the people want done. He/she is accepted by the people as a person of wisdom and sound judgement and one whose advice has been valuable in the past. He/she might be wealthy and powerful, or a person known to be very religious. Different people may be leaders in different areas such as agriculture, religion, politics or health. The leaders you are interested in should have some influence over people's actions which are related to their health.

Why are leaders important?

Community leaders usually make decisions that result in success or failure of a project. They are trusted and the people of the community will work with them more quickly than with you. If this is to be the community's program you must count on community leaders to take some responsibility for its success. You are the spark plug and the source of assistance. You can help bring together the other resources needed for improved community health. But the project will not be a success unless members of the community participate; their participation is usually decided by community leaders. The people to work with are those respected by the community and who are willing to learn and work.

Two kinds of local leaders

1. *Formal leaders:* Are generally paid for what they do. Projects sometimes fail or move slowly because these people were overlooked during the planning stage. Consult them often and request their advice and assistance. Gain their cooperation. Examples of formal leaders are:

   - Political appointees (mayor, party representatives)
   - Government officials (police, national guard)
   - Village chief
   - Religious leaders
   - School teachers
   - Heads of organizations

2. *Informal leaders:* May receive no money for what they do and have no offici authority. They come from the local community and often have more influence than formal leaders. They are not necessarily the persons with the best houses or the best pieces of land, but they are liked, trusted and respected by their neighbors and are willing to help. A woman may be a leader in respect to the need for a better water supply while her neighbor may mainly influence vegetable gardening.

How do you discover the informal leaders?

The first step is to consider the responses you received when asking villagers "Where would you go for help if you have a health problem?" Other questions you might use are:

"Who are the important people in the community?"

"Whose opinion do you respect?"

"Whose advice do you follow?"

"Who is wise?"

"Who settles arguments within or between families?"

"Whom do you think people would go to for advice when their children have fever? To organize a special trip or event?"

You will probably find that the people named are those with leadership qualities and that the named will differ according to the problem to be solved.

However, leaders may not be the persons who show the greatest interest at the beginning of a project.

You may not uncover obvious enthusiasm to help others, but people who express interest, friendliness, and willingness to work, or peole whose name was mentioned often by neighbors, may be your key to potential leaders. In your quest to discover local leaders, do not bypass those who appear to be against your work. Give them special attention and try to win their support and cooperation.

Example of a local leader: the birth attendant

Birth attendants are the most widely distributed of any category of health-related person. The reason for this is that women usually wish some assistance at the time of delivery and they are unable to travel far or to wait long for some one to reach them when they go into labor. The birth attendant is also working at a time which is especially appropriate for maternal and child health education. Unfortunately, birth attendants are often untrained, but they are often very influential with mothers.

Identifying and working with local birth attendants can be very effective in health education. In fact, in some poor communities the entire standard of health, sanitation, infant and childhood death rates and family planning have been revolutionized primarily through the work of birth attendants.

What can leaders do for the community?

If an effort is made to give leaders a thorough understanding of how health problems affect community well-being and how these problems can be solved, they can contribute immeasurably to better understanding among the people. They can also become a powerful motivating force for community unity and action. Through their own acceptance of improved health methods and practices, they become a motivating force for change.

But, care must be used when deciding which leaders are the influential ones related to the specific community problem. In Tonga, an enviornmental sanitation project was initiated after preliminary planning with the community leaders. In Tongan society the women rank higher than the men according to traditional Tongan Kinship systems; the men however, are the heads of the households. The organization of the project was based on the men's support, and, at the request of the men, the women were not involved in the planning. The health workers left the decisions about methods of work to the male leaders but conducted the evaluation themselves. The project failed.

When a second project was planned in another Tongan community, an analysis was made of why the first one failed. The conclusion was that both the male and female leaders should have been involved. Both groups were given full control of the activities under guidance of the health worker. The villagers were left to themselves to make the decisions and suggestions supported by the majority were encouraged and used. Evaluation of the second project showed that every goal was achieved.[1]

Project success can be achieved through the efforts of the villagers themselves, providing the right approach is used in promoting the active participation of the most influential community groups and leaders.

Here are some other ways leaders can contribute to the success of a project:

1. Bring people to meetings.
2. Arrange for and find meeting places.
3. Help reach more people by telling others.
4. Help people in the community know you and gain confidence in you.
5. Give general information about the program and help interpret it to the people.
6. Help identify problems and resources in the community.
7. Help plan and organize programs and community activities.
8. Help plan and organize any services which might be provided.

1/ Fanamanu, Joe and Tupou, Vaipulu. "Working through the Community Leaders, An Experience in Tonga." *International Journal of Health Education.* July-September, 1966.

9. Give simple demonstrations.

10. Conduct meetings.

11. Lead youth groups and various individual projects.

12. Interest others in becoming leaders.

13. Help neighbors learn skills

14. Share information with neighbors.

15. Serve as an officer in an organization or chairman of a committee.[1]

How can these potential resources of the community be mobilized? In discussions with leaders, what have you discovered that is important to them? Maybe it is the protection of children's health. Maybe it is convenience, privacy, or cleanliness? Maybe they are moved by competition—"Other communities are solving their health problems." They might express pride in their community—"We have done so many other things in this village, but this problem remains." Capitalize on these motivations. Use them to guide you towards a better understanding of the people of the community.

The Health Committee

A health program must have some kind of organized group to make it work. The family, the church and the school all have primary purposes other than health. They can take part in the health program, but their separate efforts probably will not be able to make it work. Often, a health committee is organized which involves community leaders and other representatives of community life.

There are many ways to form a committee. Remember the reactions of the people you have talked to in the community. Who was interested in the health situation? Who was hopeful? Which people were recommended as leaders? Talk with these people. Suggest a meeting of the group of them.

In the meeting, discuss the purpose of organizing a committee; let them decide to make an organized attempt to solve community health problems.

In a small village in Nigeria, after a preliminary survey of the community, the village chief was approached and the suggestion for the formation of a health committee was made to him. He liked the idea and was requested to invite other influential members of the community, including women.

The chief requested that the objective of the meeting be presented by the health worker. The worker invited the members to go out on an inspection tour so that all would have a part in determining what their needs and problems were. This they did and it served as a

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1/ *Homemaking Handbook for Village Workers in Many Countries.* Agency for International Development, Washington, D.C., March 1971, pages 196-197.

starting point for the meeting. Both male and female members desired urgent solutions to the problems they discovered during the tour. The chief was elected chairman for a village health committee and a teacher was chosen as secretary. Decisions were made in that meeting about plans for solving some of the problems found.[1]

The community members must become involved from the beginning in the decision-making and planning for the community. To make changes, they must commit themselves. They may need to see health improvement projects of other communities. Suggest a field trip for this purpose. They learn as they go along and will be better able to manage their own projects.

A separate health committee may not be the best choice for some communities. If an existing local committee or other structure appears to be an effective means for improving community health, then perhaps this group could add health to its other concerns.

Purposes of a health committee

A health committee can serve several purposes:

1. To discuss health problems and discover felt needs.

2. To plan ways to reach goals and objectives that promote new, sound health practices and attitudes.

3. To implement plans and organize projects.

4. To receive and consider new information about health and development of possible interest, and convey this to the community.

5. To encourage all members to gain skills and confidence in working in a group so that the work in the community will not depend on any one person.

For suggestions on planning and conducting a meeting, see Chapter V. Records of proceedings at each meeting should be kept and read at succeeding meetings and matters arising from them should be discussed. These records can always be referred to by any new member so that he/she can acquaint him/herself with the progress and history of the committee's work.

Members of the committee are usually elected, but its formal make-up will differ from one country to another, often from one village to another. The important thing is that you keep abreast of the committee's work and progress. Usually you will be invited to attend the meetings, and may even be chosen as a member. Because your position in the village is temporary, it may be best to decline any offer to be an officer. You are a resource person—one who assists and supplies information and guidance. Participate, but do not become totally responsible.

After the creation of a Health Committee, initial projects should be simple in nature and should not demand a long period of time. Refer to the next chapter for further discussion of

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1/ "Health Education: The Development of Local or Village Health Committees in Eastern Nigeria." Anonymous. Supplied by Action Library, Washington, D.C.

this point. The building of a latrine for a dispensary or school could be completed after only a few work days and would impress upon the Committee—and the community—what they are capable of doing. If a complicated project such as a water system or construction of a health post were chosen first, the problems of materials, technical assistance and the duration of the project would probably discourage the people and have a crippling effect on the Health Committee. More difficult projects can be attempted after the Committee has had some success with simpler projects.

Once a health committee or committees exist and have begun their work, they should always have a problem that they are currently working on. If committees remain stagnant for a period of time, they become ineffective and will cease to exist other than in name. There should also be lines of communication between the local health centers and the Health Committee to ensure recognition and cooperation between the two.

In summary, health committees can accomplish many things to improve community health if they represent key groups in the community, communicate and cooperate with other community workers, committees and institutions, are well-organized, and if they plan projects based on community needs and interests. Your role is to assist the committees in doing these things. The next two chapters will discuss steps in planning, implementing and evaluating a community health project.

PART II

PLANNING, IMPLEMENTING AND EVALUATING COMMUNITY HEALTH PROJECTS

CHAPTER III

PLANNING A COMMUNITY HEALTH PROJECT

Among the most important ideas for anyone involved in community work in health education is to be acquainted with as many aspects of community life and its people as possible. The purpose of gathering this information is to help the health or other community worker have a fuller understanding of some of the problems of the community and some limitations on the solutions to these problems.

Once the community members and the community worker come to a joint understanding and desire to work on a project, a sequence of steps should be followed in planning the project. Each step will be discussed separately in this chapter. The four steps are:

Step 1: *Define the problem:* It is important to involve the community and focus on their needs.

Step 2: *Choose a goal and objectives:* These should be measurable so that evaluation is made possible; they should relate to the problem; and they should be possible to achieve.

Step 3: *Assess the resources and barriers to the project:* This will involve finding the necessary materials; skills, people and funds; and investigating possible obstacles to the success of the project. The importance of doing this before carrying out the project is to make the plan for action realistic.

Step 4: *Carry out and evaluate the project:* An outline should be made of the specific activities aimed at reaching the goal. Because evaluation is an on-going process and takes place throughout the life of the project, both topics are covered together.

Step 1: Defining the Health Problem

The first requirement in bringing about change is for people to agree that there is a problem and that something should be done about it. The challenge is to avoid simply looking for things which the people do which are unhealthful. Search for the meaning of existing practices. For example, you may find that the community women use the banks of the river or pond for toilets and you may try to convince the community to build and use household privies. This effort could easily fail if a new means is not provided for the women to meet and chat each morning, such as at a protected well site.

To say that there is a health problem is a very general statement which covers many specific situations. In order to plan your work, to set goals and to go into action, you must be able to define the specific problem on which you wish to work.

To help you define it and involve the community in doing so, talk with the local leaders and villagers. Use a questioning approach in an attempt to find out how they view the health

situation. Start from the general and work down to the specific problems you have in mind. For example, if you found a very unsanitary environment in your survey of the community you might contact the leaders and proceed as follows:

1. "What kinds of things need to be done in this village?"

2. "What are the illnesses most common in this village?"

3. "What do people die of, mainly?" "Are there many children under 5 years old dying? If so, what from?"

4. "Do they have diarrhea, dysentary, cholera, typhoid, worms in this village?" "What causes these illnesses?"

5. "Are there any latrines in the village?" "What do people use?"

6. "Has any thought been given to building latrines?"

7. "Why would some people refuse to use them?"

8. "If these diseases could largely be stopped if the people themselves decided they wanted to, would people in the village want to plan together to do away with diarrhea, dysentary, cholera, worms, etc.?"

The problems you have already uncovered in the formal village survey can be compared with the views expressed informally through this type of questioning. In fact, much of the essential information may have already been gathered while you were first getting acquainted with the community.

The place for further problem identification and definition is with the Health Committee. Here are a few steps to help the Committee define specific health problems.

- What is the nature of the problem? What is the problem situation, behavior or condition?

- What is the extent of the problem? How bad is the situation? How significant is the problem in terms of the community?

- Whom does the problem affect? What groups or individuals are affected?

- What are the size, the characteristics and the nature of the "target" group?

- Where does the problem occur? What geographic area is affected? What is its size and nature?

- How long has the problem existed? Is it improving or not?

- How much would people be willing to contribute in work, money, land for a well, sand for concrete, labor, etc.?

Step 2: Setting a Project Goal and Objectives

People can agree that a problem exists and is important and still not solve it. This can happen even if everyone agrees that something should be done. People must agree on what they will do about a problem.

A project will not succeed unless it has goals which are based on the problems agreed upon and defined by community representatives. The goals for a project are taken from the important health problem identified in the community. For example, if the problem identified was too many people sick from amoebiasis, the goal would be to reduce the occurrence of amoebiasis in the community.

From the goals of the project objectives, a Plan of Action, and evaluation methods will be developed and will allow you to assess a change. For example, merely to say "To improve sanitary conditions" leaves you no means with which to determine your achievements. If you had said "To install 35 latrines" you would then have some means of objective evaluation.

In completed form, an objective correctly written might appear like this:

What	⟶	The number of sanitary latrines
Who	⟶	used by families
How much	⟶	will increase by 25%
Where	⟶	in Community Y
When	⟶	in the next three months

You will note that this objective has been written in *behavioral terms*, i.e., privies will be used. Obviously, just having such facilities can be misleading. You can also write educational goals in terms of the numbers of people who will understand or believe certain things. Once you have some baseline data, you can also measure increases in healthful attitudes or behavior.

Two further points in relation to defining the goal and current writing objectives must be taken into consideration. First, they must be related to the problem at hand. For instance, if the current problem under consideration is an unsanitary environment, then the promotion of the construction of a school would not be a goal relevant to the problem. That is, achievement of the goal would have little, if any, effect on the problem.

A final point is that the goal be possible to achieve. There should be a reasonable chance for success. If, for example, the community cries for the assignment of a doctor to their village and you know that the priorities are for preventing disease and that there is a great shortage of available doctors, then why attempt it? Point out these facts to the leaders and consider more realistic goals. If the goal is impossible to achieve from the outset, then embarking upon the project will only lead to failure and lose for you the trust and cooperation of the

community you worked so hard to gain. Consider your resources and obstacles. Be realistic. Start with goals which can be achieved.

It is true that many goals take longer to reach than others, but this alone should not be grounds for dropping them. "Long-term goals" may take as long as five years or longer to achieve. Usually, on the path toward reaching them, you will find several sub-goals or "short-term goals." These are the stepping stones to a larger goal; they can be considered projects in themselves.

For example, the problem encountered may be the high rate of tuberculosis cases in the community. The long-term goal might be a decrease in the morbidity rate (number of cases). But there are several approaches: treatment of existing cases, prevention of new ones, or education about the disease. Any one of these could be considered a short-term goal. Short-term goals are usually more specific and, as their name implies, involve projects of short-term duration. So, remember. Whether it be a long-term goal or a short-term goal, the goal and its objectives must be:

1. *Measurable*

2. *Relevant*

3. *Possible to achieve*

Now that the community has identified and defined a problem and has set goals, what do you want the outcome of your efforts to be? The answers to the following questions will allow you to set the objectives which must be achieved in order to accomplish your goal. Each objective should describe specific changes that must be achieved to accomplish the goal of the project:

- *What* do you want to change?
- How *much* change do you want?
- *For whom* or *for what* do you want the change?
- *Where* do you wish the change to occur?
- *When?* By what time or date?

All of these questions must be answered at the outset of the plan for change so that you will be able to check your progress along the way. These objectives must be *measurable*. At times, you may find that your initial goals do not coincide with the priorities of the community. Your own analysis or that of health officials may indicate that improved sanitation is most needed but the community may feel that they should first improve their

road so that they can market their produce. You may need to convince your own supervisor that helping to meet the community's goals will make it easier for them to try to improve their environment. Perhaps the community will agree to set aside money resulting from their marketing for sanitation.

Step 3(a): Assessing Barriers to Changes in Health Behavior

This will involve investigating possible obstacles to the success of the project. The importance of doing this before carrying out the project is to make the plan for action more realistic.

As you have been getting acquainted in your community, you may have seen some evidence of poor health. You have observed that:

- many children are thin and small and have big bellies;
- the people live mostly on rice;
- few families have chickens, pigs, rabbits or goats for food;
- there is a year-round growing season, but few families grow vegetables;
- the only available milk is purchased;
- there is some fruit in the market, but it is expensive.

You have talked with the leaders and the people in the village about the problems of illness, fatigue, and deaths of young children. They show interest in doing something about it. You ask a group of leaders and a few parents to meet to discuss the problem and ways to solve it. In your meetings, you lead the people to discuss why the problems exist.

You and the group decide that there are not enough of the foods needed for good health and the villagers do not know about these foods. What are the obstacles, habits and attitudes that now keep people from growing green and yellow vegetables? Possibly the following items are found:

- lack of knowledge, information or experience
- no suitable seed
- seeds not easily available
- trouble with insects
- not enough water
- no real interest

- traditions and beliefs which hinder the acceptance of these food items
- lack of shared community resources such as irrigation pump
- no banking resources
- high debts

Obstacles or barriers to health education exist in all communities and relate to many things. There may be interest in things other than health (for example, roads, schools, agriculture). Usually, a community has seen little change as to its health status—that is, whether the general health level is high or is low. They have nothing to compare their predicament with, and hence do not see it as a predicament at all. Therefore, when health competes with such paramount demands as: earning a living; providing shelter, food and clothing; bringing up a family; it may be far down on the community's list of priorities. If the community is satisfied, on the whole, with its state of health, changes in behavior will be resisted mainly because to make these changes, the people will be inconvenienced. Long distances, to travel for medical care, long waiting periods, even painful experiences such as an injection, could also be barriers to change in the community. They may want other help, though, such as freedom from bedbugs or opportunity to space children. Such needs create opportunities.

Many cultural traditions, practices and beliefs in every society are related to health and may also be barriers to change methods of child feeding. The following are examples: the usual length of breast-feeding; when the first foods are introduced and their nature; whether milk or its products are customarily employed; the traditional use of other protein sources, especially legumes, eggs, fish; the commonness of such "prestige" practices as: bottle feeding, the use of carbonated beverages and over-milled flour; and the dietary practices of women during pregnancy, lactation and after giving birth.

These practices may be passed on from one generation to the next. Until acceptance of a change is complete, the return to traditional or popular practices will occur due to the strong need of the individual to be accepted by his/her social group.

Other barriers to health education could result from differences in languages. Perhaps there is an indigenous dialect in the area that you don't know. Find an interpreter and, if possible, train him or her so that he or she can work directly with the people. Remember, the translator is an "insider" and therefore more readily trusted and accepted by the community.

Closely related to the language barrier is the communication problem caused by illiteracy or low educational levels. The concepts of modern hygiene, for example, may have no meaning to a people who have never been exposed to facts related to the cell, microbes and the use of the microscope. In this case, the importance of knowing what the community knows becomes evident.

Other things to keep in mind when considering problems and setting goals are: the economic ability of the people (do they have the money, time resources, with which to take action?) and the community attitudes towards solving the problems. If their attitudes are negative, a

definite barrier to change exists. How does the community feel about other government programs and workers?

Step 3(b): Assessing Apparent and Potential Resources

What are some of the resources you can use in your work with the community? Each situation offers different possibilities, but do not forget that you are a very important resource person in the area where you work. To function efficiently then, it is important that you know as much about your community as possible. What has been the history of its involvement in health issues in the past? You may have to dig deep to find a cohesive force, but all communities work together in some form.

The term "community" implies a sense of togetherness and, if you try, you will probably find that neighbors have helped each other in the past, even though it may not have been on a large scale. Perhaps one family helped another to build a house, or to take a sick child to the hospital. Perhaps the local church has a youth group which convenes and raises funds for various projects. Look; you will find potential resources.

What organizations or agencies exist? What are their activities and interests? Many communities have official (governmental), voluntary (private), professional, religious and civic groups. What are they doing? Are they interested in health? What approach do they use? Can you work together, one complementing the other?

Are there any extension workers other than yourself in the community? Find out and introduce yourself and what you are doing. Perhaps you can work together toward a common goal rather than fragment efforts and duplicate work.

Get to know the background, skills and strengths of those in communication with the community. These could be the teachers, the traditional healer, the merchants, the religious leaders, the heads of community organizations and clubs. Also available are the people involved with your specific project—your staff. There are those people working in various government and private agencies at local, national and sometimes international levels. Get to know what goes on in the local government and national ministries, who is available for contact, and what other agencies they can suggest as sources of further information and support. Acquaint yourself with the existences and services of the agencies and organizations in the country where you work. If possible, visit these agencies and take with you a leader from the community.

What kinds of supplies, materials and equipment will be necessary for the health plan? A vaccination campaign will need vaccine, possibly some means to keep it cold, needles and syringes, a place to sterilize equipment, paper on which to keep records, a means to publicize the campaign, a place to work, etc. To build latrines, you will need to know the geography of the area, where wood, sand, gravel and cement are available, etc. How can your project adapt to the available materials?

What will you need for educational supplies? Does a mass-information system exist? (radio, TV, newspapers) Where will you get paper, crayons, tape, tacks, projector, film? Can you

make a bulletin board, blackboard, flip chart? Decide what you need and investigate your resource agencies, the schools and people. Who can be responsibile other than yourself? Look for talent within the community. Utilize relevant materials already in use. Make your own only when necessary so that time and efforts are not wasted.

How will you maintain your supplies? Will you need a place to work? In almost every project, some monetary source must be available. Where can you get money? Can funds be raised? How? Who will organize a fund raising project? Who will handle the money? These are all very important questions because trust can be lost if funds are mismanaged.

In Nicaragua, funds to build a community clinic were raised by the local Health Committee. The officers volunteered their time and visited the various merchants in the surrounding communities, asking for donated items. Such things as pots and pans, soap, fabrics, paint, food and toys were obtained and made as prizes to the winner of various community contests and games set up by the Committee. The contestants purchased a ticket for the contest at minimal fee and nearly everyone participated. A local leader who manufactured beds donated a bed for a raffle. The provisional clinic collected a voluntary fee for injections. All of these are possibilities for fund-raising projects, but remember to plan who will be responsible for safe-guarding the funds and who will make the decisions about their use raising them.

You are not working alone in this investigation of resources. Talk with the leaders, your supervisor, heads of community organizations. Get suggestions. Experiment. Publicize. But, most important, work together.

Step 4(a): Developing and Implementing a Project Plan

You have learned to know the people of the village and how they live. You have probably already helped them with some of their simple problems. You may have given some demonstrations and talked over village problems with the people. The Health Committee has identified a problem, defined a goal, and written objectives; barriers and resources have been assessed. Planning ahead to know what to do, when to do it, and how it should be done is essential in any kind of work.

"But why is a planned program needed?" A plan of work is a picture or "map" of what to do. If you and a friend started walking down a road, you would need to know which way to go in order to get to your destination. There could be several different roads leading to the same place, but perhaps one has advantages over the others. You need to decide between you which one to follow. A planned program is a guide to help the community get where it wants to go.

The importance of planning cannot be stressed too strongly. There must be joint planning on common problems by all of the interested groups. Attempts at cooperation too often fail because one person or one organization decides on a plan to be followed and then tries to get the others to follow a plan they did not help design.

If there is joint planning on a common problem, all are working toward the same goal. Independent action causes competition of the sort that is fatal to the success of a health

plan because it can lead to competition for the attention and actions of the people, and create wasteful demands on limited resources.

The people must participate in each step. They need to decide just what to accomplish and what their targets are. When the people have agreed on their goals, they must decide how they are going to reach them. Sometimes it is harder for people to agree on how to do something than to decide to do it. Sometimes, each person thinks his or her own way is better.

The leaders may need help in deciding what will happen if they do it one way and what will happen if they do it another. Which will be better for the people? Does one cost more than the other? They must set priorities and decide on which is the better way for their community at this time. Deliberate involvement of as large a number of people as possible is good because it means that many more people know and understand the problem. All those who participate learn something. Men, women, children, young people, old people, merchants, housewives, speakers, farmers; all have some skill which can be utilized in carrying out a community health program.

The community leaders or the Health Committee must make the plan. This plan may have many parts. It will need a time schedule. What should be done first, and what comes next? How much time is needed for each job so that each will be done at the right time?

The planners must find out what is needed to do the job, who can do it, how much it will cost, and many other things. They must find the time, the people, the money, the equipment and anything else that is needed. Educational methods for each stage of the plan should be selected as part of the plan. See Chapters V and VI.

Once the steps to be taken have been defined, the Health Committee or planning group must decide who will be responsible for each step. For some jobs, workers will need special skills and equipment. Other jobs can be done by village people with no prior training. There will be many things to do: planning for equipment, arranging meetings, explaining procedures.

Everyone must feel that he/she has a chance to help. Doing the job is the actual step for which you have been planning, be it building a road, planting vegetable gardens, or vaccinating against measles. This step will give the community members a great measure of satisfaction and will draw the group more closely together.

To summarize, when planning a project with the community, the Health Committee or other community planning group will need to write down a Plan of Action. This is the "map." It will serve as a guide and will help in implementing and evaluating the project and planning another one.

The Plan of Action should include:

1. A statement of the goal and objectives

2. What steps are to be taken—activities

3. Who will be responsible for each step—in charge

4. What materials, equipment, people, funds will be necessary for each step—resources

5. When each step is to be completed—target date

6. Space for observations

While planning educational activities needed to achieve the objectives and goals of the plan, the Health Committee should review the different elements (such as resources, constraints and alternative approaches) that might have impact on the success or failure of the program. The following checklist summarizes some important things to consider while writing a plan.

Resources Required

	YES	NO
1. Economic:		
Is sufficient money available locally for the project?		
If not available, can sufficient money be raised locally?		
Will outside economic assistance be necessary?		
Are there known to be public or private sources of economic assistance for this type of project?		
Is the probability good that outside economic assistance can be obtained?		
2. Material:		
Are there any special supplies or equipment needed for the project?		
Is this material available locally?		
If not locally available, can it be obtained when needed from sources outside the community?		
3. Technical:		
Are people who will be working on the project technically prepared for the work to be done?		
If additional technical expertise is needed, is this available in the community?		
Is outside technical assistance required?		
Can it be obtained when needed?		

	YES	NO
4. Human:		
Are a sufficient number of people available for work on the project?		
If more people are needed can they be readily recruited?		
Will people have sufficient time to devote to the project?		
Possible Constraints		
1. Attitudes:		
Is the project responsive to local felt needs?		
Is it viewed as a priority by health personnel?		
Is it viewed as a priority by community members?		
Is this project enthusiastically supported by those who will benefit from it?		
Does the project have broad support in the community?		
Are project workers convinced of the need for and importance of the project?		
If a similar project existed previously in this community, did it fail?		
If a previous project failed are reasons for failure known?		
Have conditions changed to make failure of this project unlikely?		
2. Results:		
Will the project show demonstrable results or improvement?		
Will a long-term sustained effort be required to produce noticeable results?		
If it is a long-term project, does it seem feasible to sustain enthusiasm until results can be demonstrated?		

	YES	NO
3. Culture and Change:		
Will the project conflict with local attitudes or practices?		
If so, are the attitudes or practices in question important to the local culture and resistant to change?		
Is there any way to minimize culturally-based resistance to the project?		
If the project will attempt to change local practices, will the new practices be expensive for the people?		
Will new practices be time-consuming for the people?		
Are the new practices to be promoted likely to be socially acceptable?		
4. Politics:		
Does the project have any political implications?		
Is there any possibility of opposition from local leaders or socially prominent groups?		
Is the project likely to receive support from local leaders and groups?		
Is the support of local leaders important to the success of the project?		
Alternative Solutions		
1. Are there any other solutions to the problem this project would attempt to solve that might be equally or nearly as effective?		
2. If alternative solutions exist, would they be more difficult to implement than the proposed project?		
3. Could the proposed project be reduced in scope if sufficient resources were not available and still be effective?		

Your View

	YES	NO
1. Would this project have a good chance of success?		
2. Is this an important project?		

Step 4(b): Evaluating the Project

Don't stop yet—evaluate! Planning never ends, so, each time a project or step of the program is completed, the Committee should look back over what has been done to be sure that things are going as they should. This is called evaluation and is an on-going, continuous process—just like planning. You must evaluate past efforts to plan for changes.

Develop a means for evaluation when defining the goal and writing up a Plan for Action. Keep in mind your community survey and any responses from questionnaires and statistics you might have collected as possible sources of information for evaluation.

Following each step or activity, ask questions such as:

- How well did we do?
- Did the plans work?
- Why did we succeed? or
- Why did we fail?
- What should we be doing now?
- What do we do next?
- If we made mistakes, can we keep from making them again?

Encourage the community members to begin to evaluate the project shortly after its initiation. Are people using the latrines that have been installed? Are they keeping up their vegetable gardens and eating the harvest? Are the children really going to school? Did the group for whom you intended your activities come?

After each phase of the project is over, you must follow-up to determine how successful it has been. At the end, ask yourself all of these questions again. Did you get the job done? What can be done to make your efforts more successful?

Possible kinds of measurements you might use to evaluate your project, if planned from the beginning, are:

1. *Quantity or amount*

   a) How many persons were reached?

   b) How many posters, pamphlets, home visits were made?

2. *Quality* — What do the people think?

   a) the leaders?

   b) the participants, villagers?

   c) other health workers?

   d) the pupils?

3. *Changes in knowledge* shown by:

   a) questioning

   b) requests for opinions

4. *Changes in attitude*

   a) Community support for the program.

   b) Requests for further cooperation by the Health Department.

   c) Less opposition by groups in the village who had previously been against the project.

   d) Public opinion poll

5. *Changes in behavior,* such as:

   a) Increase in visits to the clinic or health worker

   b) Improved habits and conditions noted at the school

   c) Increase in the number of children immunized

   d) Increase in the sale of milk, meat, vegetables or other good foods

   e) Increase in the number of pregnant women seeking early prenatal care

   f) Increase in the number of births that occur in the hospital or with the trained midwife

   g) Increase in the number of infants under medical supervision

h) increase in the number of women who breast feed their babies

i) installation of sanitary facilities (latrines, garbage pits)

6. *Changes in health status* as shown in:

a) Child growth

b) Numbers of sick people (as shown in a survey)

c) Number of deaths as reported in public health statistics

d) Improvement in health as shown in individual cases

e) Reduced accident rate

f) Reduced exclusion from school due to illness, lack of clothing or poor hygiene[1]

In the case of evaluating an educational approach, you will find it difficult to measure the results. The mere giving of lessons or demonstrations and the ability of the people to repeat them are surely not the only measure. Behavior change is the goal, yet these changes are not easily evaluated immediately since they may occur slowly over a long period of time.

As always, throughout your work with the community, it will be necessary to record your observations. This is a form of written record which you've already done during your community investigation. You should discuss the importance of record keeping with the Health Committee.

Evaluating the progress of complex activities such as public health is never simple, but it can be made easier by clearly defining the project's objectives early and relating your evaluation plan directly to those objectives. With careful planning, evaluative data will help to assure that the project is better managed, and that those who support the work, and particularly members of the community, will feel confident in the progress being made.

1/ Turner, Claire E. *Community Health Educator's Compendium of Knowledge.* International Journal of Health Education, Switzerland, 1964. pages 105-108.

CHAPTER IV

A CASE STUDY AND EXERCISE IN PROJECT PLANNING

The following is a summarized version of a case study written by L. M. and Jane R. Hawks entitled "Diptheria immunization in a Thai community".[1] It concerns an immunization campaign which failed. The study reports what happened and why; it does *not* report what ought to have happened. The purposes for presenting the case are:

1. To illustrate some of the complexities of getting people to try something new, even when faced with an immediate danger.

2. To provide the reader with an opportunity to diagnose an actual case history and;

3. To provide a framework for developing a health education plan as an individual or group training exercise.

The Community of Bang Chan

Bang Chan is a rural area located in the flat central plan of Thailand, with a total population of 1,700, mostly Buddhist. The area consists of 12 hamlets among which only one has Moslem inhabitants. Practically every one in the Bang Chan area is a rice farmer or a laborer.

Existing Health Facilities

Bang Chan has about 8 traditional practitioners and 15 traditional midwives. Four persons called doctors by the villagers lived and practiced in Minburi, a city near Bang Chan. Only one had received complete medical training. He is in charge of the health center. The rest of the staff consists of a dentist and a nurse-midwife. Only common illnesses are treated at the health center. Patients with serious symptoms are referred to the hospitals in Bangkok. Treatment can be free. Despite its official status and its low fees, the health center is not as popular as the doctors who live near the market place in Minburi. Their fees are relatively high, but they explain their diagnoses in terms familiar to the farmers. They also refer their patients to hospitals in the capital. On the preventive side, a sanitarian is attached to the district office. He conducts regular immunization sessions in the schools of the district and is responsibile for taking necessary measures in case of an epidemic. As the only public health worker in the district his time devoted to health education activities is very limited.

The incident

The incident happened during the rice planting season. A three-year-old girl named Prang and a small boy, her cousin, contracted diptheria. The girl was treated by the local traditional practitioner and died, while the boy was taken to the hospital and cured.

After the death of the little girl, her relatives started worrying about the safety of the remaining members of the family. They went to see a research team which was conducting a

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1/ Benjamin D. Paul, ed., *Health, Culture and Community*. Russell Sage Foundation, New York, 1955.

study in health and agriculture in the area. The team explained that diptheria was a child's disease which could be cured and prevented. They offered to take any child for injection to the local health center. At the health center, they were told that the vaccine was out of date. A member of the research team offered to visit the district officer at Minburi. The latter promised to order enough vaccine to immunize the total child population of Bang Chan as soon as the public health officer who was attached to the district office returned from training.

A few days later, the public health officer found orders for a vaccination campaign on his desk. He wrote letters to four headmen and transmitted an oral order to the fifth one through the intermediary of a villager of the hamlet in question.

Awn, the owner of a store, was asked by a member of the research team to help spread the word about the campaign. During the ensuing days, he told people who got out of the bus in front of his store and those who passed by in their boats to bring their children the next Saturday for immunization. No more than this information was given. Meanwhile, the headmen sent out word. Some personally visited all the houses of their hamlets; others sent out word as people passed by their homes.

The two schools, one Thai and one Moslem, were still closed for vacation.

On Saturday, the public health officer, assisted by a member of the research team, began to give injections at Awn's store. He chose the store for his personal convenience and also because of its location, at the junction of both water and road transportation routes. Boatloads of children arrived and they were told to return for a second injection the following week. In the meantime, the schools had opened and the headmen of the Moslem community told the teacher of the Moslem school to send all the children to receive their vaccinations.

More children came, but many children of the preceding week did not reappear for the second injection.

The public health officer announced that those who did not get their second injection should come to the health center in a week for the final vaccination. At the center a week later, some children showed up, but none came from Bang Chan.

The results obtained were:

In 8 hamlets for which census data were available, 34% of the child population under age 15 were immunized, of whom only 55% came back for a second injection. It was also noticed that the Islamic population responded more fully to the call than the Buddhist hamlets.

Why did the program have little educational impact? The research team decided to conduct a survey to find a partial answer to this question and the following were the findings:

1. *Villager's attitudes towards health and modern medicine*

   The villagers of Bang Chan believed that diseases are caused by the evil spirits or by the entry of foreign objects into the body by accident or malicious intent. Ill health is also

due to an imbalance of the four basic elements: earth, wind, fire and water. However, popular beliefs have not interfered with the general acceptance of modern medical treatment. Such acceptance is due to the effectiveness of Western drugs, mainly the antibiotics and the striking results of surgery.

However, efforts to gain popular acceptance of preventive medicine such as sanitation, personal hygiene and disease prevention had met with little success at that time. The villagers had learned to fear cholera and typhoid, but not diptheria. They also regarded childhood disease with relatively little concern. In addition, it was the rice planting season and sending children off meant cessation of work in the rice fields. Furthermore, vaccinations and any health measures involving the children usually took place at the schools and not at a store.

Religious beliefs also influenced the response to the call for immunization. In Buddhism the body is considered a source of contamination for the soul while this is not the case in Islam. Thus, it was predictable that the Islamic hamlet would respond more fully to the call than the Buddhist hamlets.

2. *Channels of Communication*

First were geographical channels of communication. In this boating community, information spread along the Bang Chan canal, up to the main canal.

Second were the social channels of communication. The Buddhist temple was one of them. During the year, people came to the temple and priests went out into the community to collect alms. However, during the rice-planting or harvest season, only a few older people visited the temple. The mosque provided a better channel of communication than the temple because the Moslems attend services regardless of the season.

The other social channels of communication were the schools and the stores. A message given to any member of a group or neighborhood through one of these channels reached most members of that group or neighborhood.

3. *How were these channels used and what was their effectiveness?*

First of all, neither the temple nor the mosque was utilized to carry the message. Furthermore, the schools were not open until the second week of the campaign, and only the teacher of the Moslem school was notified.

Five out of 12 headmen were officially contacted by the district health officer. The only other source of information used was Awn, who informed passers-by, who in turn transmitted the message to their group of relatives and neighbors.

How effective were these social channels of communication? The survey showed that:

a. The headmen were more effective as a channel of communication than informal circulation of information through neighbors or relatives.

b. The teacher was more effective than the headmen in transmitting information regarding the children's health, in part because, in the minds of the villagers, vaccinations were linked with the schools.

4. *The content of the message*

The content of the message also played an important role in the response of the community to the call for immunization.

Originally, the message transmitted to the public health officer contained several elements: diptheria, a dangerous and contagious disease, was then in the community; however, the disease could be cured, as proved by the recovery of the little boy, and could be prevented. Finally, the message urged the people to bring their children to be vaccinated.

However, the headmen were asked by letter, only to announce to the population the time and place of the vaccination, without further explanations. Awn shouted only this limited information to passers-by. The villagers, who already did not have much knowledge about immunization and diptheria, failed to perceive a sense of urgency in this over-simplified message. Since children were usually vaccinated in the schools, the parents did not understand why the health officer could not wait a few days and give the injections at the schools instead of asking them to bring their children to Awn's store. As mentioned before, this was particularly inconvenient because it was the rice planting season and labor was needed in the fields.

5. *The authority of the communications*

The authority held by the communicators also played an important role in motivating a person to act. Formally, the headmen had some authority in the hamlets. They kept the peace and settled quarrels. However, over the years, their authority had decreased considerably. The district office and its police now oversaw the life of the community, and the villagers knew that the headman was the lowest-ranked government employee. Consequently, an order coming from the headmen did not carry much weight.

How did the headmen perceive the order? The order came not from the district officer, but from the public health officer who, despite his official status and relation to the district officer, had little authority over the headmen. Consequently, some headmen did not take the order seriously.

In the hamlets where the headmen personally visited each household, the rate for immunized children was 59%, while it was only 37% in the hamlets where the headmen delegated a boy to do their work. And in hamlets where the headmen did not receive an official letter, participation was minimal. The reasoning was that since no official order was received, it was assumed that participation from that community was not necessary.

How was the message sent by Awn perceived? Awn's age, past experience as a successful farmer, and his present position as a successful farmer, and his present position as a prosperious store owner gave him considerable influence. However, he

lacked official authority to give orders. Furthermore, some people even believed that he was doing this to attract business.

The survey showed also that few people knew of the child's death or understood the danger of contagion of the disease. It was then evident that most parents did not act out of a sense of danger but primarily in response to authority.

An Exercise in Problem-Solving

Let's now assume the case of a couple (husband and wife) who are assigned to work as community development extension workers in Bang Chan. They learn of the vaccination experience from a person who worked on the research survey team and realize that the community experiences regular outbreaks of diseases which could be prevented through immunization and improved sanitary practices.

How could a long-term educational program be planned, implemented and evaluated in Bang Chan? Make assumptions when information is lacking.

1. Taking into consideration what is already known regarding the people's beliefs toward health and disease; the political and power structure in the community; and the existing health personnel and the resources available, what kind of further and detailed information would be needed?

2. What fact-finding methods will be used? What formal and informal methods for getting information will you suggest? Why? At what times during the planning stage would one collect this information? Who would take part in this? What topic areas would be included in the study?

3. Assuming that the informal ways of gathering data were selected, to whom would they go for information? What kinds of questions would be asked? How many informal visits would be sufficient? Where would be the best place to get the needed information?

4. Assuming that the formal ways of collecting data were chosen, describe your sampling methods. Who should be included in the sample? Prepare a questionnaire which would help in planning the health education program. (You may revise the model provided in Appendix B.)

5. What kind of analysis would be made? Would they be more interested in knowing the percentage of children who had been vaccinated, or in knowing the reasons why parents did not send their children to receive injections? Would they be interested in knowing people's knowledge regarding childhood diseases and immunizations? Would they be interested in knowing the best channels of communication, and how they could use them?

6. For whom will the educational efforts be planned? Which questions in the questionnaire can help in deciding this?

7. What are the specific goals and objectives of this program and how will they be measured?

8. How could they get the people of the community involved? Would it be more useful to organize a village Health Committee? or a Mothers Club? or a Parent-Teachers Association? Who would be involved and what would be the role of the group?

9. Which educational methods would be most appropriate for achieving the goals and objectives of the project? (See the next two chapters.)

10. Would the use of volunteers be profitable to the program? If so, how would they be trained and what would be their responsibilities?

11. When would the program start? Who would be responsible for each activity? How long would each activity take?

12. Assuming that the use of radio would be available, what would be the content of the radio program? Would the information be woven into a drama story, a song or a spot announcement? Prepare a sample spot announcement. Explain why each message was chosen. Do you need to determine the value of using the radio? How?

PART III

SOME AIDS AND METHODS IN HEALTH EDUCATION

CHAPTER V

EDUCATIONAL METHODS FOR INDIVIDUALS AND GROUPS

Since the health project planned by the community will include plans to educate people to change their behavior in some way (or ways), educational methods will be needed. These methods are useful in helping people to change so that the health objectives and goals of the community project can be achieved.

Educational methods include individual and group approaches (interpersonal), visual aids, and mass media. The appropriate educational tools must be chosen for each project. For example, where resistence is likely to be great because the changes recommended are contrary to deeply held traditions, intensive interpersonal educational efforts may be necessary. Where the benefits of a recommended change are so great that resistance is low, mass media can be used. Nearly always, a combination of techniques is needed to achieve the behavior changes outlined in the objective of the project plan. Both effectiveness and costs must be considered in choosing a combination of techniques. In choosing educational methods, consider local traditions such as storytelling. Do your methods seek to promote confidence and self-reliance, such as through the use of group problem solving, or dependence, as with lectures? The process may be more important than the message in the long run.

INDIVIDUAL EDUCATIONAL METHODS

During your work in the community, you often find yourself talking with individuals in their homes, in various places in the community, or even in your own home or office. Teaching on an individual basis can occur in these situations.

Home Visits

Visiting a family in their home is a very effective method for teaching. You respect them by your visit and can make use of their natural environment and daily activities, making observations and any necessary suggestions for change right there.

An effective home visit must be planned, just like a community meeting, a lesson or a community project. You go to a home for a purpose. Your first visit will probably be to get acquainted and ask questions for your survey. Later, you will supply specific information or help out when asked to by the family. You may want to invite a family member to a meeting or request that the family participate in a fund-raising campaign. Whatever the reasons for your visit, you must have one and keep it in mind.

Plan your home visit as you would a lesson. A family record like the one which follows could be helpful to you. Have whatever materials necessary to reach your objective. Carry a flip chart (see next chapter pertaining to the topic you wish to discuss) if you feel it is appropriate. Carry a notebook so you can write down your observations after you visit with a family. Have your plan in mind. With practice, your visits will become easier to plan and observations and discussions will become second nature.

Make the visit pleasant. Compliment the mother. Be friendly and give praise. Use the family members' names. Talk about the family and its activities. Listen and observe. Be interested. Keep everything you learn confidential or you will lose the trust of the family. Be sure both you and the family understand what has been discussed and the future plans. Be sure to show appreciation for the opportunity to visit the home and to know the family.

When writing down your observations, you should ask yourself a few questions. What did I accomplish? Was it what I had planned? How do I think the people feel about my visit? What would I change to make the visit more effective? What did I learn to make the next visit easier? These questions help you to evaluate your visit. You may find it convenient to design your own family health education folder for use during home visits. Consider a three-part form:

A. Planning Notes: What do I hope to accomplish by the visit? (Fill out in advance.)

B. What information should be in the folder and kept up to date?

1. The family name.
2. The address and location of the house.
3. The date of the visit.
4. The name of the worker making the visit.
5. The names and ages of all members of the household. (Be sensitive to local customs about collecting such information.)
6. What health problems does the family have?
7. What problems or related topics were discussed? Other?
8. What did you suggest to the family?
9. What did they agree to do?
10. What did you agree to do?
11. When do you need to visit again?

C. After-Visit Notes: Did you accomplish what you had hoped to do? What can be done to make the next visit worthwhile? What approaches or techniques seem to work well or poorly?

Casual Visits in the Community

These visits may take place in the market, at the well, at the river while the women are bathing or washing clothes, or at a neighborhood shop. Usually you encounter a group of people and hence will probably be unable to discuss intimate problems. Also, you may be

interrupting an activity so you must be careful to be brief and not inconvenience the person you are visiting. Plan these visits, carry them out, and record them in the family record.

Office Calls

These visits may take place in your place of work or in your home. Early in your work, make it known that you will be available to speak with anyone who desires to seek you out, and let everyone know where you will be. Perhaps it will be your office one afternoon a week. Be warm and friendly. Make your visitor feel welcome. As always, record your visit and be sure to note why your visitor came to you.

GROUP EDUCATIONAL METHODS

Demonstrations

A demonstration requires planning and preparation, just as your visits do. A demonstration is a step-by-step procedure which is performed before a group. It is used to show how to do something. With each step, you explain why you do it. Often too, a demonstration can point out a better way to do something by comparing the current practice with a new method. In this case, the end results are compared and can be a very dramatic means for showing the need for change.

You can demonstrate how to protect food from household pests to a woman in her home, or you can demonstrate the preparation of a vegetable garden before a women's club. If your program is aimed at improving personal hygiene habits, you can stand before a large group and show how to bathe an infant. The demonstration you choose should:

1. answer the needs of the community
2. teach a sound practice—one you know is right
3. be timely-for example, when foods are in season
4. be given with readily available materials
5. combine seeing and doing; the demonstration should involve members of the community in preparing for it and carrying it out
6. show improvement over a method in current use
7. encourage people to try the new practice
8. be so simple that anyone watching can copy what is done

In preparing for the demonstration you and others who will make the presentation should:

- consult with co-workers about the choice of topic and the method you plan to use in giving it;
- know more about the subject than you plan to teach so you will be prepared to answer questions;

- publicize the demonstration (posters, talk with people, ask the local leaders to tell others);
- outline the demonstration step-by-step and list key points;
- assemble equipment;
- practice (see Chapter VI on pretesting).

Practice is very important if you are to give a successful demonstration. Do it exactly as you plan to do it, but before someone who can evaluate it to help you be sure that your presentation will be clear and understandable to your audience, and to be sure that the demonstration will run more smoothly. Immediately before the demonstration, arrange your equipment and supplies. Check that everything works properly. Be sure your audience will be comfortable and able to see and hear you.

The demonstration may consist of four parts:

1. *Introduction:* Explain the need for the demonstration and why you are showing it to this particular audience. Acknowledge the present method but emphasize how the new practice will improve on it. Be short and clear while convincing your listeners that the subject is important.

2. *Demonstration:* Be enthusiastic and friendly. Follow your outline and make it look so easy that everyone will want to try it. Be sure everyone understands you. Speak loudly and clearly.

3. *Questions:* Encourage discussion either during or at the end of the demonstration. Ask questions of your audience. Ask them to demonstrate back to you or to explain the steps. Ask them to help you as often as possible. If a step is not understood, repeat it.

4. *Summarize:* Review the important steps and key points briefly and tell the audience where they can get any materials new to them. If this demonstration is to be followed by further sessions, tell the audience when and where the next one will be held.

Following the demonstration, evaluate it. Did the audience learn how to do what was demonstrated? What evidence was given that the audience plans to carry out this practice on their own? Visit members of the audience to see if they are using the new methods demonstrated. How could your demonstration be improved? An example of the steps used for a demonstration on drinking safe water can be found in Appendix C. It may serve as a guide for you.

Meetings/Group Discussion

A general meeting is good for teaching something of importance to a large group of people. You can offer subject matter, questions can be discussed and the audience can participate.

Lecturing is the most common educational method used, but used alone it is one of the poorest. Learning can be much easier if the audience can see and take part in it. Visual aids

make meetings more interesting and meaningful and will be discussed later (see next chapter). Plan your meeting. Outline your talk. Think how you can emphasize each point visually. Then prepare all materials.

Consider, for example:

- Actual objects. If you are talking about immunization, show the syringe and vial of vaccine.
- Drawing simple sketches on chalkboard
- Using flip charts
- Making a series of posters
- Using flash cards to tell a story
- Using a flannelgraph
- Showing pictures or a film of how someone else already used the practice and succeeded.

Points to remember:

- *Involve the people.* This makes the meeting more interesting. Here are some ways to involve them.

  a) Have a group act out some activity (see Drama, Role Playing)

  b) Have a villager report on a successful project,

  c) Use songs to reinforce learning. In Sierra Leone, women put the key points of a meeting to music and sing them.

- At first, your audience will listen to what you have to say, but they like to talk, too. Ask each of them to voice his/her views. This way each person learns from another, each takes part and, after some practice, those who wish can try leading the discussion. To plan and lead a discussion you must prepare for it. Study what you are going to talk about. Have reference materials available as well as any pictures, charts and other aids.

- *Make the group comfortable.* Give some thought to the little things which you can do to help the community see that this is their problem and project, not yours. For example, if people usually chat while sitting on mats, follow their ways. Let someone from the community head the meeting while you serve as a resource person. Ask for information more than you give information. The meeting place and time should be convenient for the audience. Know the names of those who attend. Suggest to the leader that the meetings be short.

- *Seat the group in a circle.* This is so everyone can see faces of the others. Give everyone a chance to talk, and since viewpoints disagreeable to the group may come up, work to keep the atmosphere friendly.

- *Let the audience tell what the problem is.* Your job is to find out how they think, not to tell them what to think. If there is disagreement about the problem, help them to come to an understanding by asking the group questions that will clarify the issue.

- *Discourage speechmaking.* Everyone in the group should be allowed to contribute, but you may find one or two persons who want to do all the talking. If you say "Let's hear what someone else thinks," this may help to keep the discussion open to other members.

- *Help all to take part.* Ask questions. Show that their answers are good. Involve the shy person. Never laugh at or belittle anyone's ideas. Group discussion is a big conversation, moved by the leader, but not monopolized by him/her.

- *Guide the discussion to group action.* Help the people to decide what the problem is and to act on it. This may be the hardest part. It is easier to talk than to do what is necessary. At some point in the discussion of the problem, summarize it with the group.

  It is very important that the group members agree on the definition of the problem. Then they can discuss "How can we attack it?"

- *Help the group find technical information and help.* At times, a problem will be too involved for the villagers and they will need outside help. Help them to understand this and the importance of knowing the problem before deciding what to do about it. Sometimes you will need to help them think back over what they have said so they do not forget any important information.

Clubs

There are many kinds of organizations to which women, men and young people belong. Mothers Clubs usually involve pregnant and fertile women for the purposes of education in maternal child care. Youth groups usually consist of both males and females and may be project-oriented or involve education about such subjects as drug abuse, human reproduction, or homemaking. Farm organizations can involve both men and women.

Clubs are becoming popular in many areas. They provide for a systematic way of teaching over an extended period of time. The cooperative spirit developed through club work provides an excellent opportunity to teach that "we," the members, are responsible citizens and working as a group for the betterment of "our" community.

Songs

Village people like to sing and dance and almost every village has someone who can sing and put words to music. Give this person a topic you want to make popular such as:

The village without a safe well

The sick children who got well with the proper food to eat

The village girl who went to school to become the agricultural specialist

The house where no flies and mosquitoes breed

The lesson is learned best if the song covers one topic. The words can tell a story. A well-known tune can be used.

Drama

Drama is less common in villages, but it is a good means to interest people in a message. Most people like to play the part of someone else, so involve several people from the community. Ask members of the community to help write the script. Teachers might be of assistance. Maybe someone knows of some one-act plays already written which can be used or modified.

Any open space with a raised area will do for the performance. Have adequate seating and lighting available if the drama is to occur at night. Keep the script simple and clear. Present the drama at a convenient place and time. Say a few words at the beginning of the play to introduce the subject and give the reasons for the drama. At the end of the entertainment, answer questions and explain anything the people did not understand. Encourage discussion. Short introductory talks and reemphasis of the point, with questions at the end, are essential if drama is to be an educational method and not just entertainment.

Role Playing

Role playing is an informal play in which the members imagine a situation and then act it out. This might be used to show how different people feel about a problem and what they should do about it.

Role playing can be used to start off a discussion, to see what possible consequence of a certain action is, and to develop a better understanding of why people feel as they do.

The role-players might meet once to decide what points they wish to put across, to decide which characters will best show the issue and to assign the parts and to try a quick test-run. Too much rehearsing or advance coaching will deaden the performance though. People like spontaneity. By semi-experiencing a situation, both the actors and the audience gain a better understanding and feeling for the problem.

Role-playing should be followed by group discussion and never should be allowed to last too long. How did the people feel? What were the issues? Why? Never use controversial issues where feelings might be hurt.

Puppet Plays

People like to be entertained and puppetry can be a good means to both amuse and at the same time leave a message with the audience. Even crudely made puppets can keep an audience interested if the action is lively and funny. A sample puppet play script is included on pp. 153-157. Puppets can be made very simply, as shown on pp. 161-167.

For a puppet play to be effective, you must clearly define the points you wish to teach and limit the lesson to the things you want your audience to remember. Keep it simple with only a few points. Use a dramatic story and exaggerate the action of the characters because the villagers have come for entertainment.

The good characters must be very good; the bad must be horrible. Avoid silent pauses. Have short scenes with lots of action. The voices must be distinctive and new characters must be clearly introduced so that everyone can follow the action. Do not preach. The audience is there to be entertained. Be sure to try out your puppet play with a small group first to be certain your audience will understand the puppets and the messages you want to communicate.

The time spent in making the puppets, writing the play, rehearsing, testing, finding puppeteers, and the secondary role of the actual health message would have to be weighed against the comparative effect of this method in health education. The simpler the message, the simpler it will be to plan and carry it out. Perhaps a Mothers club or school could plan this kind of program.

Some other ideas about how to make a meeting more interesting will be found in the next chapter.

CHAPTER VI

VISUAL AIDS AND MASS MEDIA

When selected and used properly, visual aids can help to explain new concepts and relationships. But more often, they are used in ways which prevent discussion rather than discovery of such relationships. They may entertain or distract an audience but rarely educate. So use them wisely to support a true educational approach, and test out their usefullness before you go too far.

Leaflets

Leaflets can be very appealing if their message is simple and clear, and if the language is understood by the reader. Short sentences and paragraphs should be used, illustrated with simple drawings or pictures that are easily understood. Make sure instructions are exactly right before passing out the leaflets to villagers. Pretest them (see p. 59).

Remember, too, that many of the men and women in your village may be just learning to read. They will appreciate having simple reading materials which are on topics that interest them and are not written for children.

Circular Letters

You may have received information about the planned arrival of a much-needed vaccine in the village and you want to notify the villagers and perhaps request the help of a few volunteers. Occasionally, some communities can be reached through a circular letter.

The circular letter is duplicated so that many copies can be distributed, each containing the same information. The best ones are short, simple and cover one idea. If you have no access to a copying machine, perhaps the school principal will allow a few pupils to assist you, or you might ask for volunteers from the Health Committee or Mothers Club. Make sure the message is understood. Pretest it. (see p. 59).

Newspapers

Newspapers might be of some help in reaching the villagers. Announcements can be made regarding health services, demonstrations or meetings planned; new ideas can be presented.

Very often, though, the national newspaper does not reach smaller communities, or the people are unable to read them. In this case, a newsletter, written by the villagers themselves, can become the community's newspaper. Distribute it as you would a circular letter. Or, place copies on a bulletin board or wall in a public meeting place (market, well, bar, store). People will see it, and those who can read will read it to others. The news will spread rapidly.

Posters

A poster will help get people interested in the topics it represents, but alone, it cannot teach them very much. It will remind them of a meeting to be held, or a procedure to be practiced, such as using well water and not water from the river.

Posters should:

- be readable at a glance
- concern a topic that is important to people
- be easily understood
- be in accord with accepted ways of acting
- have human interest
- be placed where they will be seen by the intended audience; people can use posters for discussions

  What is the message?

  How does this relate to us?

Refer to the example of a flip chart in Appendix C (the Columbian Peace Corps Volunteers). Cards Nos. 2, 5, 6, 8 or 9 would make an effective poster. See if you can think of some other ideas.

Flash Cards and Flip Charts

Flash cards or flip charts are a series of pictures with a script that tell a story. (Similar to a filmstrip.)

How to make. Steps in making these, as with all visual aids, require *good planning in advance.* First:

1. Make a list of points that need to be brought out
2. Write a story of the points to be made
3. Break the story up into short sequences
4. Decide what pictures or drawings or cut-offs or cartoons will help visualize the story

5. Place side-by-side on a script:

A	B
Word Sequence	Picture

6. Test material on a potential audience

7. Revise

8. Test again

9. Put materials in final form

10. Use heavy paper or medium cardboard cut to desired size. Size depends on the number of people in the expected audience, seating arrangement for visibility, ease of transport, and on ease of use.

Flash cards are most useful in groups of 30 people or less. For 30 people, each card should measure about 22 x 28 inches. Flip charts can be used in larger groups, say in the school, clinic or at meetings.

Use simple line drawings, cartoons or photographs depicting the village in which you work. Try to use no more than 12 cards. Any more will be too lengthy and probably bore your audience. Let the local people show the cards, or flip the charts as the audience will relate better to its own leadership.

At the beginning, tell what the story will be about and give a purpose for listening. When telling the story, use simple local language. Hold the flash cards against your body, chest high and turn from side to side so that everyone can see. A flip chart might be placed on a table or held by you as the flash cards. Stack the cards in order. Explain No. 1, with only it showing. Then slip it behind the stack, or in the case of the flip chart, flip No. 1 to the back and proceed to explain card No. 2.

For further suggestions about preparing flip charts and flash cards, turn back to the discussion of posters above.

Flannelgraphs

The flannelgraph is one of the most effective and easily used teaching aids because it is cheap and portable. Except for trying to use this aid outdoors on a windy day, it has the same advantages as flash cards. It is very useful with people who do not read and in groups of less than 30 people.

To make a good flannelgraph, you will need a piece of cotton flannel with thick nap. Other materials you could use are burlap, a wool blanket, a thick towel, wool rugs, or almost any cloth with rough fibers. A piece 30 to 40 inches should be large enough. Stretch the cloth over a smooth board which is slightly smaller than the flannel and fasten the edges of the flannel to the back side of the board.

Pieces of felt, flannel, old rug or sandpaper will stick on the flannel. Just press them against the board and they will stay until you remove them. Tip the flannelgraph back slightly if you have any difficulty. Scraps of flannel or sandpaper can be pasted on the back of photographs, drawing or papers. Course or medium grain sandpaper works better than fine grain.

To prepare a flannelgraph story, place the title in large letters at the top of the board. Next, prepare the drawings, photos or printed material. Pretest all of these figures to be sure your audience will understand them (see above). Cut them out and paste pieces of flannel or sandpaper on the back. Put them in sequence and number them on the back.

Keep the story simple. Pictures should be kept in order and the words you use should tell one step of your story at a time. Using common local names helps the audience identify with the lesson. Some figures that might be useful to you are included in Appendix C.

Blackboard (chalkboard)

The blackboard is most useful in situations where writing may aid in understanding an idea. It can be used along with other teaching aids (flip charts, flash cards, flannelgraph, film slides) to summarize the essential points made to draw diagrams, to clarify certain points, to write out directions for further activities, to develop the lesson point by point and to highlight and answer questions.

You must, of course, plan ahead when using the blackboard. Some things to keep in mind:

- Write clearly in a large script
- Keep drawings or diagrams simple
- Use the blackboard to clarify the lesson, not as a basis for it
- Stand so your audience can see what you are writing, do not keep your back to them
- If you have too much to write, then you are probably not using the blackboard effectively
- Anything put on the board ahead of time and not covered in the discussion will distract attention
- Talking while writing on the board is confusing
- If you make a drawing, always ask the group what it is, to assure understanding

You can make a blackboard from a 30 x 40 inch piece of plywood, cardboard or carton material. Paint this board with a special paint made by using:

- 1 to 1 1/2 parts of kerosene
- 1 part of varnish
- 1 part of lampblack (soot)
- enough powdered pumice to make the painted surface slightly gritty

Photos, Slides and Filmstrips

Photographs are always of interest and can aid in education when they are also meaningful to people. People can compare pictures taken of a house before and after improvements are made. A very dramatic comparison can also be made between photos taken of malnourished children in the village before and after receiving treatment.

A filmstrip is a series of still pictures on one roll of film that, in sequence, tells a story. You will need a projector for these, as well as for slides. Small, lightweight, inexpensive ones are available. If you have a camera, you can take pictures of good ways to do things, right in the village where you work, and have them made into a filmstrip, slides or photographs. There are definite advantages to photos:

- They can be photographed in the town or region where you work thus assuring familiarity and recognition by the people.
- They may be in color or black and white (color would be especially important for foods, although you can always use the real thing or models in place of photos if they are not in true color).
- They are relatively inexpensive and reproducible for different uses (posters, flashcards).
- The action, position, and characters or objects can be easily manipulated.
- They can be simplified by the "block out" method to emphasize the point being made.
- You can make them yourself.
- With a 35 mm camera, you can produce filmstrips too, but this means planning well ahead for proper sequence (a filmstrip by definition is a series of still pictures on one connected roll of film.

The same care should be taken with photography as with drawing, taking into consideration the familiarity with visual aids of the group you are working with.

Things to remember when using photos, slides and filmstrips.

1. Try to make and select pictures in which all objects are familiar to the people to whom you are going to show them.

2. Try not to use pictures where only parts of important objects are shown.

3. Make sure that all objects are shown from the level at which they are normally seen.

4. Try not to use photographs which show objects larger than they really are.

5. Use natural color photography whenever you can.

6. Keep everything out of the picture which is not important to the message.

7. When showing pictures one by one, remember that people need time to comprehend them; ask them to say what they see and explain if they make mistakes.

8. Filmstrips must be photographed in a logical sequence.

9. If you want to use photographs of people, be sure that those people understand how you are going to use their pictures, and give their permission for it.

Weight charts

When working in an under-fives or rehabilitation clinic, weight charts, when properly used, can be a helpful teaching aid and a reminder to the mother not only to come to the clinic, but also of what happens when her child eats well.

Weight charts are graphs printed on durable, often brightly colored cardboard and protected by plastic envelopes. The mother or guardian keeps it and brings it to every clinic. The chart measures weight for age and, if properly designed, are clear, easy to use, and easy to understand.

Dr. David Morley has designed a "Road to Health Chart" which provides a health record of the child and can be used to educate the family about the growth of its child. An example of this and another weight chart will be found in Appendix C along with directions on how to use them.

Films

People who will not attend your lessons or any kind of meeting may go to see films. For this reason, you can use films as a way to get people interested. Showing a moving picture effectively takes *planning* and *forethought*: You will need electricity or a generator, a projector and films.

1. Be sure the projector is in good working order; know how to operate it.

2. Have suitable physical arrangements. For example, seating arrangements, hearing and lighting arrangements.

3. *Always* preview a film so that you may *plan* for its proper use. Involve a group of villagers in previewing the film. Villagers can assist in presenting the film to the village.

4. *Introduce the film:* What is the film about? It is easier to understand the message of a film if we have some idea of what it is about. Example, "I am going to show you a film entitled 'How Disease Spreads'. It will show very vividly how disease spreads in a village. It will show what causes disease to spread and it will show how disease can be prevented. This film presents a problem which is very important in every part of the world and of very great importance to us here in Bamboon village."

5. *Give a purpose:* When viewers have a purpose for looking at a film they will understand and remember more of the content of the film. A few questions *given to the group in advance* will give them a purpose for viewing the film. For example, "Does disease travel in our village the way it does in the film?" "What are the ways disease travels?" "What can we do about stopping the spread of disease in this village?"

6. *Discussion:* The questions given in advance can serve as the basis for discussion at the conclusion of the film. Discussion will *make the group think* about the film and its meaning for them. Discussion *will help to fix the important points* of the film in the minds of the audience. Discussion *can help in clarifying any points* which are not clear or concerning which additional information may be needed.

7. *Show the film again:* Often it is desirable to look at the film again to get information which may have been unnoticed in the first showing. *People who are not accustomed to seeing a film may have to see it several times before getting the point. Avoid showing a number of films at one time, particularly those which may be unrelated.*

8. Never show a film without having a discussion.

Radio

With the growing popularity of transistor radios, the radios offers extension workers new opportunities for community education. One approach is to ensure that your agency keeps you informed about radio programs with important health information so that you can let the community know. Organizing group meetings around such programs has been found to be useful. The community can also write questions to health and community development programs for answering over the radio.

Local radio broadcasting stations are often willing to broadcast messages about health clinics, services, basic concepts for preventing or treating many diseases, or other educational messages which are a part of the educational effort.

The *spot announcement* offers a flexible and efficient means of carrying health themes to the community. "Spots" are similar to commercial advertisements because they consist of short, persuasive messages, of 10 to 60 seconds in length, that can be broadcasted during breaks in the routinely scheduled program. They can be repeated frequently, which helps the listeners to recall what has been said, and also leads to a wider audience. Spots are also relatively inexpensive and do not require the audience to have a long attention span.

Spot announcements are already widely used to communicate messages covering national, regional and community affairs; information for the public good; events; and goals and campaigns of government and private organizations. Spots thus offer a ready place for community health messages. Radio can prove to be beneficial through announcement of activities and meetings in your community. Specific information about disease, malnutrition or sanitation can also be given. Caution must be exercised, though, when planning spots concerning topics which are not publicly discussed or that are taboo in the culture. Examples might be: tuberculosis, sex education, pregnancy spacing, or venereal disease.

In preparing and writing spot announcements, a few points should be remembered:

- Discuss subjects that are easy to talk about. Difficult subjects might be presented if led up to with a series of spots.
- Talk about something that will be interesting and useful to the listener.
- Present only one subject and one single idea in each spot.
- Use an attention-getter in the very beginning. A catchy phrase, music, or a sound, such as a baby's cry, can serve the purpose.
- Provide reasons or ideas that cause the listener to want to take a certain action.
- Have the listener's point of view in mind.
- Consider the listener's attention span.
- Be concise, precise and move quickly from one point to another.

Samples of radio spot announcements appear in Appendix C.

If you decide that use of the radio will have merit within the community where you work, consider actual community involvement in the planning, carrying out and evaluation of health-related radio messages. Discuss this possibility with your supervisor before presenting it to the community. Make sure that it is acceptable for *you* to seek cooperation with the radio stations. If not, find out who has that authority and request their assistance. If possible, have a community member accompany you and take part in all aspects, so that on-going contact remains when you leave the community.

You and selected members of the community will need to determine the type of program you wish transmitted, its content, length, and times of broadcasting. Determine, too, what will be the cost and who or what organization might assist in your efforts.

DESIGNING VISUAL AIDS

You are undoubtedly using visual aids. How often have you drawn a map on the ground, sketched a symbol or used some gesture to describe something? Following are some ideas to encourage you to make other visual aids.

Remember that in the communication of ideas, visual aids can be misused or overused. One cannot say that any visual aid will adequately serve as a substitute for personal contact or personal efforts of communication. One can say, however, that visual materials of an appropriate nature, carefully selected and used effectively, can be very important to communication.

Symbols used in visual aids must be adequately understood. A bed does not look the same the world over. Neither does a coat, nor does a well, nor does a latrine. The symbols used to depict articles must be understood in the culture for which the material is intended. This is why the visual aids made locally, with your community clearly in mind can be the most effective in building understanding. Effective visual aids are best produced by or with the assistance of members of the community.

Visual aids are used to communicate an idea or convey a need for action. Two important questions about content should be answered before designing visual aids.

1. *The problem.* It is important to ascertain how the problem is seen from the point of view of local people. For example, in working on the improvement of contaminated water, there may be no problem of contamination *as far as local people are concerned.* Water which looks clear may not be considered contaminated by local people. It may be necessary to help people understand how water becomes contaminated. This may be exceedingly difficult. It is important to keep in mind that local customs are acceptable to people and there must be good practical reasons to change them.

2. *Acceptable answers or solutions.* You may see the situation as a scientific one; however, the actions recommended must be practical and acceptable to the people concerned. For example, boiled water in certain cultures is usually consumed only by "sick" people. The answer, therefore, may lie in removing sources of contaimination from water rather than trying to get people to boil it.

Selecting material to be presented. The following additional questions may be of assistance to you in refining ideas about the material to be presented in visual form:

- *Characteristics of audience.* Who are you trying to reach? Just men? Just women? Just children? What is the occupation of the potential audience? What is the cultural background? What is the education of the audience? What is the social status?

- *Acceptability of solution.* What does the potential audience think about the problem? What are the values and goals related to the changes recommended? Is the proposed solution acceptable? What is the present attitude of the potential audience? Is the action possible to attain? Is it physically possible? Is it financially possible?

- *Understanding material.* What about language? Is it understandable? Is the material attractive? Will it capture attention? Will it be interesting? Will the audience understand?

- *What about visualization?* Are the drawings of pictures acceptable? Will they be understood? Has the material been tested? Can the audience understand the pictures, the names?

- *Simplicity is an asset.* Studies of the understanding of visual aids indicate that too much detail is confusing.

To summarize the guidelines for designing effective teaching aids they should be:

- Relevant
- Attractive
- Simple
- Convey one idea
- Promote action
- Inexpensive and durable
- Understood

Suggested steps in making visual aids.

1. Work with local people.

2. Determine the material to be covered (use of questions similar to those above may help).

3. Limit the visual aid to one or two specific points.

4. Decide with members of the community what type of visual material would be most appropriate. (see below)

5. Pretest a draft of the material on people from the intended audience. (see below)

6. Make appropriate revisions.

7. Pretest material in final form.

Informal Pretests

How can we be sure people will understand materials prepared for them—posters, pamphlets, stories, puppet shows, demonstrations and visual presentations of all kinds? We can try them out. We can test them under conditions similar to those in which they will be used. Offer the materials to a small group of people from the intended audience. Ask them these questions:

What is the purpose of the material? What information is it supposed to convey? What motivation is used? Is the action which is wanted clear?

Does the material make people want to act?

The answers to these questions will give you an idea of the effectiveness of your material. Ask these people also how you might make the material more attractive and easier to understand.

MASS EDUCATION METHODS

In using individual or group educational methods, you have personal contact with those you are teaching. It is sometimes too easily assumed that printed materials are not useful in communities where only a few people read. However, these few people are often important sources of information for others. Other mass educational methods can also be effective.

Mass educational methods can be used to:

- repeat messages to those you have spoken with personally
- interest people in new ideas, new projects, new procedures
- tell the villagers about the health project

PART IV

COMMON COMMUNITY HEALTH PROBLEMS

CHAPTER VII

NUTRITION

Malnutrition is the most important basis for health problems in developing countries today. Many diseases and deaths which appear to be from infections are actually preconditioned by malnutrition. The severity in developing countries of tuberculosis, diarrhea, common respiratory infections and the contagious diseases of childhood are principle examples. Nutritional diseases are also important in their own right. Furthermore, a poor diet limits the ability to concentrate, learn and work.

The period between late fetal growth and the age of five is a most crucial period of life nutritionally, and therefore both the pregnant woman and the growing youngster must be provided adequate nutrition. At six months of age, the healthy infant will have doubled his/her birthweight and tripled it by a year.

To prevent severe malnutrition, early recognition of the symptoms of its mild forms is important. This can be accomplished through regularly scheduled weighing at child clinics or in the community if no clinic exists nearby. Weight is marked on a weight-for-age graph, such as the Road to Health Chart (see Appendix C) on which is printed the weight curve. Through use of the graph, growth failure can be seen. And because a child must be healthy to grow, measuring growth is the best way to measure a child's health.

Following are some facts about malnutrition, its forms and prevention, and some basic points about necessary nutrients. Suggestions for use of this information in planning educational activities are also included.

Reasons for Malnutrition

1. *Lack of education*

    a. Uneducated parents are often unaware of modern ideas of nutrition and food production.

    b. Many people assume that a "full belly" is all that is necessry to be well fed. They cannot understand that it is possible to suffer an illness due to a lack of certain foods in the diet. "Witchcraft" is often blamed instead.

2. *Poverty*

    a. Foods high in protein and fat, necessary for energy and growth, are more expensive than those with carbohydrates.

b. People with little money are unable to buy or produce a wide variety of foods.

c. Low incomes also prevent people from buying supplies and equipment necessary to increase food production or improve food storage.

d. A person cannot afford to take advantage of large economical quantities of any commodity when only a small sum of money is available to him/her at any one time.

3. *Low Food Production*

a. Often the tools and methods of food production are out-dated and slow; poor seeds are used, and the work is done by untrained people.

b. Bad weather may lead to drought and famine.

c. Insects, birds, rats and wild pests may ruin much of the harvest in the fields or in storage.

d. The practice of "slash and burn" causes soil erosion, which lowers the crop field.

4. *Lack of time* to prepare food properly, to maintain home gardens and to provide special dishes for children.

a. Often water must be carried long distances or it must be boiled. This takes time, energy and fuel.

b. Preparation of cereal grains can take several hours.

c. Parents spend many hours in the fields or selling in the markets and are separated from their children.

5. *Poor hygiene and sanitation* lead to diarrhea, intestinal worms and other infections and parasites that cause malnutrition or worsen it.

Also lacking in many areas of the world is an even distribution of food on the national, regional, and socio-economic levels as well as within the family. Better transportation is needed to supply certain foods to areas where they are lacking. Parents need to be educated so that they will ensure the larger amount of the family's protein foods for the children.

Forms of Protein-Calorie Malnutrition

A. *Kwashiorkor*

This is caused by a diet consisting mainly of carbohydrates (starchy foods) and lacking in protein, especially animal protein. It is most commonly seen in the child aged one to three years who has been weaned from the breast too early, usually because of another pregnancy.

Signs of Kwashiorkor

1. Edema: swollen legs and feet, and sometimes the body.
2. Limp, small muscles but surface body fat remains; the muscles are used up to provide protein.
3. Misery: the child is dull, uninterested in anything, miserable.
4. Hair changes: usually lightens in color, becomes thin and is easily pulled out.
5. Paleness: the protein which normally colors the skin is lacking.
6. Skin changes: rashes, becomes dry and peels off sometimes leaving sore areas; may be cracked at mouth corners or behind the ears; infected open sores.
7. Watery stools: from failure to digest foods, especially sugars.

B. *Nutritional Marasmus*

This is caused by a diet lacking both in protein and in calories (a lack of food of any kind): starvation. Most commonly, marasmus occurs in the first year of life and is associated with failure of breast-feeding and frequent diarrhea.

Signs of Marasmus

1. Failure to grow; an extremely low body weight.
2. Wasting of *both* muscles and surface fat.
3. Loose stools.
4. Hair changes but less noticeable than in kwashiorkor.
5. Face looks like an old person.

Differences from Kwashiorkor

1. Occurs when child is under one year old.
2. Child is obviously thin and wasted.
3. There is very little swelling (edema), if any.
4. Does not appear miserable, just old.
5. Has a good appetite.

Because Kwashiorkor and Marasmus often occur together, it is convenient to think of them as *Protein-Calorie Malnutrition.*

Prevention of Protein-Calorie Malnutrition

Long term

1. Improve the family's food supply (especially of animal protein such as milk, meat and fish; plant protein foods such as legumes; and high protein cereals).

2. Improve the level of nutritional education (especially so that mothers adopt correct feeding practices for their children).

3. Improve the economic level of the country.

Immediate

1. *Provide health education* for all sections of the community but especially for mothers and fathers:

   a. breast-feeding for the first six months; then the gradual introduction of available mixed diet, including animal and plant proteins, *TOGETHER WITH BREAST MILK;*

   b. continue to breast-feed for at least one year, preferably two;

   c. make the best use of foods available from cultivation, from shops and from child care clinics;

   d. child (pregnancy) spacing; to prevent too early weaning.

2. Look for early signs of mild and moderate malnutrition by monitoring the curves on the weight graphs at child care clinics. This may be due to stopping breast-feeding; not supplying a growing active child with the needed protein; infections diseases that commonly occur in early childhood. Malnourished children should be tested.

Nutrients needed for good health

These come from both animal and plant sources; animal proteins are more expensive.

Animal Proteins	Plant Proteins
meat	legumes (beans, peas, nuts)
eggs	cereal grains, (rice, wheat, oats)
fish	dark green leafy vegetables
poultry	(including spinach)
milk and milk products	
insects	

A mixture of plant foods taken at the same meal often can replace the protein of expensive animal foods. Two foods with poor protein might together form a diet with adequate protein. In many countries, tubers and legumes compliment the cereal grains very well; for example, rice and beans are often served together in Latin American countries.

Energy Foods (Carbohydrates and Fats)

1. *Carbohydrates* are the cheapest and most available source of energy in most diets. They are found in:

   a. cereals, corn, sorghum, millet, rice, wheat

   b. flour and breads

   c. roots and tubers (potatoes, yuca, etc.)

   d. fruit, fruit juices and jams

   e. sugar

   f. legumes

2. *Fats* are expensive but supply more energy per gram than carbohydrates or protein.

   a. fatty parts of animals

   b. liver

   c. egg yolks

   d. butter and cream

   e. all nuts

   f. soybeans

   g. seeds

Protective Foods (Vitamins and Minerals)

Small quantities of these materials are needed by the body and are usually supplied in a good varied diet.

1. Good sources of *Vitamins*

   a. all brightly colored foods (for example carrots or beets)

   b. raw vegetables and fruits

   c. egg yolk and liver

   d. butter

2. Important *Minerals*

   a. iron (required for red blood cell formation) — meat, liver, kidneys, egg yolk, dark green leafy vegetables

   b. calcium (required for bone and teeth formation) — human and animal milk, milk products, bones of small fishes.

Vitamin A

Vitamin A is necessary for the eyes, the skin, and the mucous membrances (which line the eyes, mouth, nose, digestive and urinary tract). It is especially important to both children and pregnant mothers.

Blindness in some tropical areas often could be prevented by small amount of Vitamin A or a little instruction. In these areas the blindness is likely to occur in those children who are not breast-feeding who are fed only cereal diets.

Foods Which Supply Vitamin A

Animal Sources	Plant Sources	
liver, especially from fish	carrots	bananas
butter	pumpkin	dark green leaves
oily fish	sweet potatoes	sweet peppers
eggs	paw paw	most highly —
milk (not skimmed)	papaya	colored fruits
animal fats		and vegetables

Results of Vitamin A Deficiency

1. An inability to see in dim light (night blindness).

2. Dry eyes that become easily infected. This may cause blindness.

3. Dry, rough skin.

4. Susceptibility to infections, especially respiratory (lungs).

5. Poor digestion.

Measures to Increase Vitamin A

1. Vitamin A is stored in the liver. If large amounts of grain and yellow vegetables can be eaten when they are plentiful, their Vitamin A can be stored in the liver for later use by the body, when the fruits and vegetables are no longer in season.

2. Pregnant women should eat more of these fruits and vegetables so that their babies will be born with a good supply.

3. Several foods can be commercially prepared with Vitamin A added, such as rice and sugar.

4. Vitamin A capsules can also be used where deficiency is likely. Because Vitamin A is stored for a long period of time a 200,000 unit tablet can be taken only every 3 months. (Except for this use vitamin tablets play little practical role in developing countries).

Vitamin C

Vitamin C is necessary to help the body fight off infections. It also plays a role in the healing of wounds and burns. Because of the availability of fresh food, Vitamin C deficiency is seldom seen in the tropics.

Foods Which Supply Vitamin C

Breast milk
Citrus fruits: oranges, grapefruits, lemons, limes
Green leafy vegetables: spinach, turnips and pumpkin tops
Guavas, pawpaw, mangoes, tomatoes, green peppers
Cabbage, cauliflower, broccoli, potatoes
Cereal grains that have sprouted

Results of Vitamin C Deficiency

1. tiredness, weakness

2. swollen and bleeding gums, loose teeth

3. nose bleeds, pinpoint bleeding on the skin

4. soreness and stiffness of the joints
5. abdominal pain
6. slow wound healing
7. tendency towards infection

Measures to Increase Vitamin C

1. Plant village, school and home gardens and fruit orchards
2. Encourage the use of edible wild fruits and vegetables
3. Teach reasons for eating fresh foods
4. Discourage use of carbonated drinks and artificial fruit juices
5. Encourage use of raw fruits and vegetables
6. Teach preparation of cooked fruits and vegetables:
   a. use low heat
   b. cook briefly
   c. use a small amount of water
   d. do not drain the water, serve it with the vegetables.

Vitamin D

Vitamin D is necessary for the body to be able to use calcium. Calcium is necessary for formation of bones and teeth and for clotting of blood. In pregnancy, and early childhood, when calcium is needed for growth and teeth formation, a lack of Vitamin D can be serious. Despite the sunshine in the tropics Vitamin D deficiency is common because mothers tend to hide their infants from the sun.

Foods and Other Sources Which Supply Vitamin D

Exposure of the skin to sunlight
Foods that contain Vitamin D:

liver	eggs
butter	fat from fish

NOTE: human and animal milk are poor sources unless Vitamin D has been added.

Results of Vitamin D Deficiency

1. Rickets

   a. The 'soft spot' remains open past 18 months of age

   b. The bones appear deformed

   c. Bow legs and knock knees

   d. The primary teeth come in late

2. Softening of bones in the adult which leads to deformity and fractures

NOTE: In women, deformity of the bones, especially the pelvis, may narrow the outlet for the baby, causing difficulties at birth.

Measures to Increase Vitamin D

1. Teach mothers to expose their children to the sun, but cautiously. Hiding the infant from the sun is a deeply ingrained practice in some places. It may be helpful to compare a child's needs for sunshine to the needs of plants. Too much sun is, of course, dangerous to a child.

2. Offer foods which contain Vitamin D after 3 — 4 months of age *along with breast milk.*

3. Commercially add Vitamin D to milk, flour, margarine, etc.

Iron

Iron is a mineral that is very important for the body. It is used by the red blood cells to transport oxygen from the lungs to all the tissues of the body. It is especially important during the first two years of life; adolescence, especially girls; and the child-bearing period. Menstrual bleeding causes iron deficiency to be much more prevalent in women.

Foods Which Supply

Meats (especially organ meats, i.e., liver, heart, kidney)
Legumes
Whole or enriched grains
Potatoes
Egg yolk
Green leafy vegetables
Dried fruits

Results of Iron Deficiency (Anemia)

1. Weakness and tiredness
2. Shortness of breath
3. Paleness (pallor)

Measures to Increase Iron

1. Increase the intake of foods high in iron by making people aware of these sources and encouraging their use.
2. Supply supplementary iron in the form of pills, tonics.
3. Commercially add iron to wheat and other grains.
4. Iron medication when necessary.

Possible Eduational Activities

Within the framework of a nutrition program, it would be hoped that the community would realize the importance of good and adequate nutrition, that the members of the community would understand and use the basic concepts related to nutrition, and that the community would take an active role in improving its nutritional state. Nutrition education could be provided in many settings for example:

- The child clinic offers an excellent opportunity for the extension worker who is interested in nutrition. Many topics and activities can be incorporated into its health education component:
  - Breast-feeding is best
  - Soft foods containing protein should be introduced at five months and given routinely at six months
  - School children need food before leaving for school
  - Children with diarrhea need lots of fluids
  - Pregnant women need extra food and added protein, vitamins, and minerals

- Mothers can be taught to recognize the early signs of protein-calories malnutrition in Mothers club or prenatal clinic sessions.

- Food production might be discussed and methods demonstrated at clubs or community meetings.

- Community gardens can be incorporated into the school curriculum. Pupils could be totally responsible for the gardens.

- A grain storeroom could be constructed to protect cereal grain supply from rodents, insects, or mold.

- Youth groups could organize a small animal cooperative (chickens, rabbits, goats) to increase the supply of animal protein.

- Lay groups could be organized within the community to discuss nutrition and hygiene at regular monthly meetings.

Some Examples of Innovative Nutrition Programs*

The following examples serve to illustrate what kinds of activities are taking place in the field of nutrition.

- In Liberia, mothers are urged to utilize local foods that are accessible, cheap and effective in coping with malnutrition, rather than to buy prepared baby formulas for feedings. Plantain powder, nutritious and easy to prepare, is fed to undernourished babies, almost all of whom have shown great improvement in their nutritional status.

- In India, the project staff make home visits every six weeks, studying infant feeding practices and providing education concerning the diet of young children. Through these visits, the staff have been successful in getting community people to plant kitchen gardens and engage in poultry farming.

- To establish whether a child is underweight where scales are not available a project in India utilizes a bangle bracelet, four centimeters in diameter, made of cheap material avaiable in the area. If the bracelet slips easily over the child's elbow, it is certain that the child is underweight. This technique seems to work for children up to four years of age.

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*American Public Health Association. The State of the Art of *Delivering Low Cost Health Services in Developing Countries* APHA, Washington, D.C., January 1977, pp. 27, 60.

- Many children discharged from a nutrition rehabilitation center in Ghana returned after six months more marasmic than at the first admission. Many mothers said they had no means of earning money and so could not buy appropriate food. A sewing school was therefore established to provide vocational education for mothers who attend the nutrition rehabilitation center. Mothers are taught to sew with needles and sewing machines as part of their education at the center. Mothers who finish the course are placed in jobs, and can thus supplement the family budget and help to break the vicious cycle of poverty, infection and malnutrition.

- In a project in Nepal, the word "runche" conveys the local interpretation of malnutrition. The term implies that a spell placed on a child is the cause of his illness. The project staff have realized that, by understanding and accepting the local concept as well as by using the word for diagnosis, it is much easier to convince people of the proper treatment for victims of malnutrition.

CHAPTER VIII

MATERNAL AND CHILD HEALTH

In many developing countries a large proportion of children die before they reach school age, and many of those who survive are stunted by malnutrition and repeated infections. Not only does the largest proportion of death and disease occur in childhood in these areas, but an even larger proportion of the disease-preventive potential is during this period. Most prevention must be early in life to be effective. This preventive effort should begin with the care of pregnancy.

Diet and Nutrition During Pregnancy and Lactation

In nearly all communities, the mother is chiefly responsible for care within the family of infants and dependent children, and poor maternal nutritional status may have serious consequences for such children. The nutritional needs of the woman who is pregnant or breastfeeding are greater than at any other time in her life.

From the nutritional viewpoint, the mother's diet should provide sufficient nutrients required to maintain her and her fetus (unborn baby) in good health during pregnancy. An adequate diet provides for the physical strength necessary during labor and delivery. After birth, a good diet continues to support an adequate flow of breast milk without danger to maternal reserves of various nutrients. And, finally, good nutritional habits are necessary to maintain the health of the mother between pregnancies.

Effects of Inadequate Diet for the Pregnant Woman

1. The lack of protein could cause brain damage to the child.

2. The lack of Vitamin A could lead to visual problems for the child.

3. The unborn child will take some nutrients from the mother which could leave her in poor health.

    a. The mother's teeth and bones will lose their hardness because the baby takes calcium needed for his/her bones and teeth.

    b. If the mother does not eat enough body-building foods, she may not be able to produce enough breast milk for her child.

    c. The mother may become anemic if the storage of iron in her body is low. The baby will take the iron he/she needs from her.

4. Iron deficiency in the mothers before birth can lessen the baby's supply of iron after birth so that he/she may become anemic. If the infant has an adequate store of iron built up while inside the mother, breast milk serves as an adequate diet during the first four months. Breast milk does not supply iron, however, and therefore the infant will need iron-containing foods added to his/her diet after four months of life. The infant will need iron added to his diet during the first four months if the mother did not have enough in her diet during pregnancy.

5. Abortion, miscarriage and still-birth occur more often in poorly nourished women. Nutritional deficiencies increase the chance that the baby will be malformed; generally poor diets of mothers may cause babies to be born undersized.

Care of the Pregnant Woman Before Birth

Many complications and deaths of mothers and infants can be prevented. Every pregnant mother can protect herself by attending a clinic for pregnant women, every month at first, and then every week during the eighth month when complications are most likely to occur.

Important Activities for Care of the Pregnant Woman

1. Insure good health of the mother by treating any illnesses and offering advice for any disorders.

2. Promote adequate rest and avoidance of exhausting work.

3. Immunize her against tetanus.

4. Assure her adequate food, with vitamins and iron, if needed.

5. Provide education in health, nutrition, and hygiene for herself, her unborn child and any other children she may have at home.

6. Watch for the woman who has a good chance of complications so that she will give birth in the hospital.

    a. Age: if she is (1) under 16, (2) over 40, or (3) over 35 and pregnant for the first time.

    b. History of complicated pregnancies

        — Caesarian section or history of long, difficult labor

        — Miscarriage, abortions, stillbirths

        — Difficulty becoming pregnant

c. If under five feet tall

d. If the baby is in an abnormal position within the mother

e. High blood pressure

f. Heart trouble or diabetes

g. Mental illness

h. Syphillis, tuberculosis or other infections

i. More than 4 to 6 pregnancies

j. Pregnancies too close together (less than two years between)

Sometimes, unexpected difficulties occur in an apparently normal case, so all women should know the following danger signs and come to the clinic or see a doctor when they appear.

Danger signs of Pregnancy

- scanty urination or a burning feeling when passing urine;
- sores or rashes of any kind;
- severe pain in the abdomen;
- chills and fevers;
- nausea and vomiting after the fifth month of pregnancy;
- vaginal bleeding or discharge;
- swelling of face, hands, or feet;
- persistent headache or dizziness;
- blurred vision;
- fits or convulsions.

Some Discomforts of Pregnancy and Suggestions for Relief

All women during their pregnancy will experience some minor discomfort from time to time. Some will disappear with time, while others can be helped. These are:

1. *Sleepiness:*

   This usually is noticed early in pregnancy and will correct itself if the mother gets plenty of sleep at night and some rest during the day.

2. *Frequent urination:*

This is due to the growing uterus pressing on the bladder and will occur early in pregnancy, disappear and then reappear in the last month or so when the baby is again pressing against the bladder.

3. *Morning sickness (nausea and vomiting):*

Not all women experience this. Those that do will do so early in the pregnancy and should relax in the mornings. Eating dry food (e.g., crackers) before getting out of bed in the morning, and eating several small meals during the day instead of two or three large ones might help.

4. *Heartburn*

This happens later in pregnancy and is similar to indigestion. Some medicines are available for this, but should not be taken without a doctor's approval.

5. *Constipation*

This can be corrected by drinking plenty of liquids and eating plenty of fruits and vegetables. Laxatives should be avoided.

6. *Muscle cramps*

a. Leg cramps caused by the pressure of the uterus and baby on the blood vessels that carry blood to the legs. They usually occur at night and can be eased by:

- bending the foot forward with the hand
- applying heat against the cramped muscle
- calcium tablets (if the cramp is due to calcium deficiency)

NOTE: Do not rub the legs vigorously.

b. Abdominal cramps: caused by the muscles stretching as the baby grows within. Relief can come from exercise or use of an abdominal binder.

7. *Varicose veins*

They are caused by the weight of the baby over the blood vessels circulating to the legs. They can be quite uncomfortable, but may be relieved by putting on elastic stockings or elastic bandages before getting up in the morning. The stockings should come off at night. Sometimes raising the legs while lying down will help.

8. *Backache*

This occurs because the muscles of the back are pulled into new positions by the growing abdomen. Low-heeled shoes, rest, and abdominal support (binder) sometimes help.

9. *Lower Abdominal Pain*

   This is caused by stretching of the internal female organs (uterine ligaments) or pressure on other organs during some activities. Changing to another form of activity will make it disappear.

Possible Educational Activities

An educational activity could be training for selected community women in the care of pregnant women. In many countries, traditional midwives, healers, and other ordinary village people have been successfully trained to provide safer prenatal health services, including knowing how to identify signs of problems requiring the attention of a trained midwife, nurse or doctor.

In South Korea, a university-supported project has been training community housewives as village health representatives to be responsible for educational and other preventive health services. These women are showing great pride in their work and are influential in changing health behavior.

Other Benefits to the Infant of Prenatal Care

Several other specific conditions could arise before or during birth and affect the health of the baby. Good care of the mother during her pregnancy can prevent these.

Conditions That Can Be Prevented

1. *Tentanus* in the newborn

   a. Immunize the mother with tetanus toxoid.

   b. Educate the mother and birth attendant in care of, the umbilical cord.

2. *Congenital Syphilis*

   a. Treat the mother before pregnancy, if possible.

   b. If the mother is treated before the baby is infected with the germs, the baby will not get the disease. If the germs of the mother infect the baby, he/she will have the disease.

3. *Blindness* (due to gonorrhea infection of the mother)

   a. Treat the mother before she gives birth.

   b. Place penicillin drops or argyrol in the infant's eyes at birth.

4. *Prematurity or Low Birth Weight*

   a. Early discovery and treatment of diseases and complications.

   b. Improved diet during pregnancy.

   c. Pregnancy spacing.

   d. Avoid excessive physical work.

   e. Give anti-malaria medication during pregnancy

   f. Give vitamin and mineral supplements when necessary

5. *Birth Injury*

   Early detection of problems (a pelvis which is too small, twins, etc.) can help prevent birth injuries. Refer these cases to specialists (hospital).

Care After Birth

1. *Diet*

   The lactating mother should eat a well-rounded diet and drink plenty of liquids. The diet should be similar to that for a pregnant woman, with more liquids added.

2. *Personal Hygiene*

   She should resume her daily bathing practices, brush her teeth after meals and shampoo normally. She is healthy and not sick unless she has experienced complications in pregnancy or delivery. It may be important for you to study local attitudes and practices which influence the health of new mothers.

3. *Medical Examination*

   She should be seen at the clinic within six weeks from delivery to have her weight and blood pressure checked. The medical staff will check size of her uterus and for evidence of infection or bleeding. Breast-feeding should be encourage.

For the Newborn Child

1. *Diet*

   The child should be fed by breast alone for the first three to four months, at which time semi-solid foods can be added to the breast feeding.

2. *Personal Hygiene*

   The child should be bathed daily, the diaper changed regularly and the navel protected from dirt and insects. Educating the mother and the birth attendant about the

importance of cleanliness in cutting the cord, and not applying dirt to "stop the bleeding" is a widely useful method of preventing tetanus and reducing neonatal mortality in many places.

3. *Medical Examination*

The baby should be taken to the children's clinic as soon as possible after birth to:

a. detect any abnormalities, infections or complications;

b. weigh him or her and begin the Road to Health Chart (See Appendix C);

c. vaccinate him or her against tuberculosis with BCG and plan for DPT and polio immunization;

d. encourage the mother to breast-feed and provide proper hygiene.

Possible Educational Activities

- The use of child clinics, if available, can be encouraged through posters, meetings and home visits.

- In New Guinea, medical workers accompany census officials and tax collectors in order to immunize and check for communicable diseases. Also, fines are imposed on mothers who fail to visit the maternal and child health clinics with their children. The fines were suggested by the local people and supervised by a locally elected councilman.[1]

- Review the contents of this chapter and identify specific educational goals and methods, as was done in the previous chapter in respect to nutrition (see p. 70).

- There is growing worldwide concern about the need for more effective immunization campaigns. Consider what you can do at your level to support such efforts. A basic chart describing immunizations for children follows and a special section has been presented in Appendix F to assist you in planning the educational components.

Breast-Feeding

Mothers should breast-feed their babies. Breast-feeding is the single most important measure in preventing death and disease in infancy. Presently, there is a dangerous trend away from the breast toward the bottle, resulting in preventable deaths from nutritional diseases and diarrhea.

1/ American Public Health Association, *The State of the Art of Delivering Low Cost Health Services in Developing Countries.* APHA, Washington, DC, January 1977, pp. 60-61.

SOME BASIC INFORMATION ABOUT IMMUNIZATIONS (VACCINATIONS) FOR CHILDREN UNDER TWO*

To Prevent	Age of Child When Given	Comments
Tuberculosis (BCG Vaccine)	At birth (1 shot only)	Immunize at birth or as early as possible after. Do not give if infant has skin rash, fresh smallpox vaccination or burns. The shot makes arm sore and leaves a scar.
Polio (Infantile Paralysis)	No. 1, 3—5 months No. 2, 6—8 months No. 3, 9—11 months Booster: 18 months	Oral Polio Vaccine is given in the form of drops in the child's mouth. Do not give while child has diarrhea. It has been recommended that the baby not be breast fed two hours before or after giving the drops.
Measles	9 months	Do not give if child has fever, rash or is allergic to eggs. Measles can be a very serious disease, particularly if child is malnurished.
Diphtheria Pertussis Tetanus (DPT Vaccine)	No. 1, 3—5 months No. 2, 6—8 months No. 3, 9—11 months Booster: 18 months	Like measles, diphtheria, pertussis (whooping cough) and tetanus (lockjaw) can be serious childhood diseases. Tetanus of the newborn can be prevented by *immunizing pregnant women*, as well as by clean midwifery services.

*For further information about immunizations, contact your local office of health or WHO representative. Immunization schedules may differ from country to country, and protection from other diseases may also be necessary, as well as immunizations for older children and adults.

See Appendix F for information about *health education* and immunization campaigns.

Many people of the world live in scattered villages. They are poor, have no adequate water supply, limited fuel, few cooking utensils, and poor storage facilities. Kitchens and bottles are difficult to keep clean and the means for preparing bottle feeds for babies are very limited. The water is often polluted, the formula or milk is over-diluted or poorly mixed, the nipples and bottle rarely properly washed and therefore are sources of disease-causing germs. Not breast-feeding or stopping too soon can cause tragic results.

Babies who are breast-fed have fewer illnesses and less diarrhea during the first year of life. The milk supplies the protein necessary for body and brain development, and helps prevent marasmus (starvation) in the first year of life and Kwashiorkor later on. Health education must stress the value of breast-feeding and the dangers of bottle feeding. In the case of a mother who cannot nurse, bottle feeding can be used, but extra caution is necessary so that the baby will not become ill.

Why Breast Milk is Best for Babies

1. It is the natural food for babies and is suited to their needs and digestion. Human milk has all the necessary nutrients in the correct proportions to be digested and used by the body.

2. It is always ready and needs no preparation or cooking.

3. It costs nothing, while all other milk is expensive, especially powdered milk.

4. It is warm and clean. If the mother is careful to keep her nipples clean, there is little chance of infection.

5. It contains elements which will be passed to the baby and help prevent him or her from becoming ill.

6. Breast-fed babies usually feel warm and secure because they get more mothering, cuddling and fondling.

7. Breast-feeding sometimes delays pregnancy, allowing the mother to nurse longer and therefore better assure good health for the baby. This is not, however, a reliable method for family planning.

Benefits to the Mother of Breast-Feeding

1. Breast-feeding causes less work; there is no need to mix formula, heat it, or clean and prepare pots and pans or bottle.

2. Breast milk is produced naturally and costs nothing.

3. Nursing helps the mother's uterus to return to its normal size and state.

4. Breast-feeding is satisfying to the mother and is a means for her to show her love to her baby.

5. Although breast-feeding will not reliably prevent pregnancy, if done consistently it sometimes prevents pregnancy. Ths can be of help to the mother who needs time to readjust physically and emotionally after giving birth, if no other child-spacing method is used.

   Health education concerning breast-feeding is being complicated by the widespread advertising of infant foods and milks by commercial companies and by the seeming success of artifical feeding by well-to-do mothers all over the world.

Ways to Alter This Trend

1. Increase the importance of breast-feeding by involving the prominent local women (leaders) in the community in the health education program.

2. Provide health education, especially for school children and for pregnant women.

3. Try to counter the commercial pressure put on parents to bottle feed through your educational efforts including posters, mothers clubs, spot announcements over the radio, if feasible, and so forth. Encourage your community to ask themselves why they are being urged (or manipulated) to buy prepared baby foods. Explore other ways of being a "good parent," such as through immunizing their children, using clean water, etc.

Introducting Solid Foods (Mixed Foods)

During the first six months of life, a mother's breast milk is all that is necessry, although iron supplementation should begin at about four months. At about five to six months of age, the child will begin to need other foods as well as breast milk. This is a dangerous period because a child who does not receive the proper solid foods will become ill with protein-calorie malnutrition.

A baby grows rapidly and therefore needs a large amount of protein. But, because of poverty, lack of knowledge or customary feeding practices, the weaning diet usually consists almost entirely of carbohydrates.

Instructions to Mothers Regarding Weaning

1. *First six months of life:* breast-feed only (unless there is some specific nutritional need); iron supplementation at about four months.

2. *After six months of life:*

   a. Breast-feed at least to 12 months of age, preferably longer.

   b. Begin offering semi-solids, based on the protein foods available at five or six months of age.

   c. By one year, the child's diet should include all items on an adult diet.

Facts to Emphasize

1. Baby is growing fast so body-building protein food is important. Examples:
   a. soups made from meat, beans, peas;
   b. hard cooked egg yolk until the first year and then lightly cooked egg;
   c. well pounded meat, poultry, fish, or groundnuts;
   d. cereals prepared with milk or egg;
   e. vegetables and fruits are also important.
2. Baby has no teeth with which to chew, so his foods *must* be soft and well-cooked.
   a. foods may be pushed through a sieve; or,
   b. foods may be softened by grinding, mashing or pounding.
3. Babies get ill very easily so everything must be very clean:
   a. clean cup and spoon should be used, *NOT* fingers;
   b. food should be stored so that dirt, flies, and other insects don't get on it;
   c. anyone feeding baby should wash his or her hands prior to doing so;
   d. babies should drink clean, preferably boiled water.
4. Small children have small stomachs; they cannot eat all the food they need in one meal each day. Baby should be fed at least four times a day.
5. Weaning should *always* be gradual: from breast to cup, from liquids to solids.
6. All new foods can be offered a little at a time, increasing the quantity each day. Offer a new food *before* his breast milk. Once he likes it, offer it *after* the breast milk.

Pregnancy Spacing and Family Planning

In the past, large families were customary in most societies; many children were necessary to help grow food and share the work. Children were a guarantee that parents would be looked after in their old age. Also, parents had as many children as possible to replace the ones that died in early infancy and childhood.

Families usually know that it is best to leave a space of a few years between births. And increasingly, they realize that they can feed, clothe, educate and give more time to their children when they space their births. Some families are also beginning to realize that

spacing and improved health care helps more of their children to survive until adulthood so that fewer births are required to ensure that parents are cared for in their old age.

Reasons for Pregnancy Spacing and Family Planning

1. *The Health of the Mother*

   a. Too many pregnancies use up a mother's store of iron and protein and increase her risks of difficult delivery. By spacing her pregnancies at two-year intervals, she offers her body the chance to fully recuperate from the pregnancy.

   b. Too many children can be a burden on the mother and can make her tired and ill.

   c. A pregnancy when the mother is too old for safe childbearing may cause her death and leave her children motherless.

2. *The Health of the Child*

   a. Each child needs individual attention during his or her early years in order to develop properly.

   b. A child weaned from the breast too early to make room for a new baby, is at great risk from protein-calorie malnutrition. The ideal interval between one pregnancy and the next is one which allows the first infant to be breast-fed for two years and weaned before the mother is pregnant again.

   c. Children have a better chance of being well-fed, well-clothed, and well-educated if there are not too many of them.

   d. Home life is happier when the home is not over-crowded and parents have time to enjoy each child.

3. *The Health of the Father*

   a. A father who is overworked and worried because he must support a large family may become ill.

   b. A father will be happier if he is able to choose a job he would like instead of feeling forced to take a job or several jobs for which he has no desire in order to provide for a large family.

   c. If there are fewer family pressures and no fear of an unwanted pregnancy, both husband and wife will probably find their sex life more enjoyable, and this can lead to a more stable family life for all.

Possible Educational Activities

Let the community know that it is possible to safely and conveniently space children. Inform them that many people already use these methods and that if the community

wishes, family planning services can probably be found. Since the desire to avoid pregnancy during breast-feeding has been found to be widespread, it is possible to base pregnancy spacing education on this desire and to encourage starting a method at least before the mother's menstruation return.

Innovations in the Provision of Maternal Child Health Services[1]

Some projects actually in progress might serve to stimulate further ideas for community involvement in maternal and child health care. (See Appendix F)

- A maternal and child health center was established at a hospital in Ghana for comprehensive, integrated care of children under five and provision of antenatal, family planning, preventive and curative services. The MCH center is physically separated from the rest of the hospital although one staff delivers all services. Demonstration gardens are attached to the facility. Clinic attendance is up, waiting time is down, and congestion in the out-patient department has been reduced. Preventive services have been made more available.

- Recognizing the importance of the local traditional practitioners in the health system, a project in Nepal has adopted some of their practices; for example, the umbilical cord is not cut for 4-8 days after delivery, which reduces risk of neonatal tetanus. Deliveries are done with minimum equipment. The maternity clinic card, which contains a record of antenatal care and family planning information, is retained by the mother and is available to the person assisting with the delivery at the home or the health facility.

- In Zambia, hostels with cooking facilities are provided for expectant mothers because of problems with inadequate transportation and difficulty predicting the date of confinement for the mothers. Thus, there is opportunity for prenatal health education and provision for proper supervision of the delivery.

- In Zaire, a sterile umbilical cord dressing pack, including a razor blade, is sold to each expectant mother after 8 months of pregnancy so that necessary equipment for cutting and tying the umbilical cord will be available whether the child is born at home or a health facility.

- A project in Ghana was facing two seemingly unrelated problems. On the one hand, there was a high incidence of communicable diseases in the community. On the other hand, the project staff was finding it necessary to contend with mothers bringing to the Health Centre not only their sick children but all the healthy ones as well, since there was no one to care for them in the mother's absence from home. Given the small space for consultation and the fact that the children cried if left outside to wait for their mothers, arrangements had to be made to supervise the "extra" children. To solve the problem, the community helped to build an

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1/ American Public Health Association. *The State of the Art of Delivering Low Cost Health Services in Developing Countries.* APHA, Washington, DC, January 1977, p. 23.

"adventure playground" where the children not in need of medical attention could be left to play. The idea of a playground is not new, but this particular one is unusual in that it also serves as an immunization center to fight communicable diseases. The project reports that the Health Centre is "full of kids" from the time the doors open and that, consequently, health education has also become an important aspect of project activity.

- In an effort to gain community support for family planning activities, a project in India sought the involvement of interested and influential, as well as formal and informal, community leaders as the initial step in contacting individuals and groups. The involvement of these leaders has created awareness and social support to certain health activities and has helped to solve the problem of existing but poorly utilized services. This approach has also aided in neutralizing unfavorable influential sources in the community. A second activity of this program is the establishment of contraceptive depots in the villages, making contraceptives available near where people live and free of cost. The depot holders were selected such that every subcultural group in the community is represented. Both of these projects activities have aided in diminishing cultural, religious and psychological barriers between the target population and its acceptance of family planning services.

- Another project in India recognized the combined problems of population increase and food shortage. This project provided family planning information and services as well as techniques for increasing food production and improving agricultural practices in general. Voluntary community leaders who are members of the National Farmers Organization participate in the program, and consequently there is better coordination and utilization of existing services and facilities. As a result of this approach, the project has better acceptance of family planning practices than the nearby non-project area.

School Health Education

The school offers an excellent opportunity for improving the health of the community. Children can be reached at a stage when practices can be influenced in an organized and controlled setting. Educated children are the future leaders of the community and can be current leaders in health education for their families. School health education is much broader than simple instruction.

A check-list for typical school health education measures follows:

1. Develop health education in the curriculum. If you teach a language, use health subjects for practice; for example - provide a "health vocabulary."

2. See that the school is provided with a sanitary water supply, that the students understand the importance of this and that they use it. The students can be involved in practical exercises in taking sanitary improvement measures on village water supplies.

3. See that the school has sanitary latrines, that the students understand the importance of these and that they use them. The students can be involved in practical exercises in building sanitary latrines, beginning with their own homes.

4. Educate and organize the students in community clean-up campaigns. This has the objective of reducing fly and mosquito breeding places, removing accident hazards, etc.

5. Start a school garden giving priority to legumes, greens and carrots which can supplement diets which largely depend on cereals and starchy roots.

6. Develop your surveillance of students for health and nutritional problems and counsel according to needs.

7. Promote a safety program in sports and other activities, and around the home.

8. Don't smoke cigarettes. Demonstrating this to students, who are only too prone to imitate adults, can cancel out the health benefits of many of your other efforts. Emphasize dangers of tobacco, alcohol and other drugs.

9. Promote collaboration between teachers, parents and health officials on health priorities. (Don't leave the students out of this collaboration.)

10. Teach students First Aid. (See Chapter 10)

11. Provide education on pregnancy needs and pregnancy avoidance where desirable. Promote family life education, postponing pregnancy and motivate optimal family size objectives.

12. Start a rabbit, duck or chicken raising project. Not only does this benefit diet, it also provides feeding and disease control demonstrations.

13. Take students on food market surveys, explaining cost values.

14. Involve students in sanitary preparation of new nutritious food combinations. This can be fun!

15. Demonstrate food protection and preservation.

16. Provide simple demonstrations of how files and mosquitoes breed.

17. Promote hand washing before meals and after defecation.

18. Involve students in health and sanitary survey.

CHAPTER IX

CONTROL OF COMMUNICABLE DISEASES

- What Causes Disease?
- How Does Disease Spread?
- How are Communicable Diseases Controlled?
- Personal Hygiene
- Disposal of Wastes
- Using Safe Water
- Control of Household Pests
- Choosing Educational Objectives
- Educational Activities

Communicable diseases are diseases which can be transmitted from one person or animal to another. Deaths from communicable disease continue to be common in many parts of the world. Among the reasons for this is the fact that disease itself is little understood. You can play an important role in the control of communicable diseases by helping people in your community to understand that they are caused by various organisms, that they are transmitted from one person to another, and that they can be prevented or eliminated by breaking the transmission cycle.*

What Causes Disease?

The communicable diseases are usually caused by microscopic living organisms called "germs." There are several types of germs that cause specific contagious diseases. For example, tuberculosis is caused by a *bacteria*, syphilis by a *spirochete*, and polio by a *virus*.

How Does Disease Spread?

As long as the germ remains in the body of its host (a human being or an animal), it can not threaten other potential hosts. If the host dies, the germ will also die.

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*If you are interested in a detailed description of symptoms, treatment and control measures for specific communicable diseases, an excellent resource is *Control of Communicable Diseases in Man*, 12th edition. A Spanish translation is in process. For information, write: American Public Health Association, 1015 — 18th Street, N.W., Washington, D.C. 20036, U.S.A.

For the germ to survive it must transmit the disease to another host. This implies a *way of exit* from the original host. There are several ways of exit. The nose and the throat are the most common modes of exit. Discharges of the gastrointestinal tract (feces) and sexual intercourse are other ways.

On gaining exit, the germ must find some *means of transportation* to the body of a new potential host. Here again, the method of spread is limited by characteristics of the germ. The syphilis germ requires sexual intercourse for transport to a new host. Certain others must rely upon other living things (vectors) such as mosquito for malaria, or lice for typhus for transport to a new host. Many germs, however, have made themselves more adaptable for transmission. The germ of tuberculosis, for example, can live in the open air, in dust, in nasal and oral secretions (sputum), and in dark places and still remain capable of causing the disease when it enters a new host.

Even with a potential host nearby, successful spread of infection does not necessarily follow. The germ must find a suitable *mode of entrance* to get into the body of the new host. Generally speaking, the mode of entrance is the same as the mode of exit. For example, the diphtheria germ leaves and enters through the respiratory system (cough — inhale), the typhoid germ through the digestive system (fecal — oral), and the malarial germ through the pierced skin. In some cases, there is an intermediate host. For example, the organism causing schistosomiasis passes from human feces into water and enters certain snails. It changes in the snail, enters the water and then penetrates the skin of people who enter that water. Another example is the river fluke which is transmitted from the feces of an infected person into the muscles of fish; people are infected when they eat raw or preserved fish.

How Are Communicable Diseases Controlled?

The control of diseases involves each step in the spread of disease, namely: the organism (germ), its present host (sources), its spreading agents (vectors), or the potential host him/herself. The measures taken are aimed at the prevention of spread and increasing the resistance of potential hosts.

Prevention of Spread. The first step is to attack the organism, which is often difficult because the organism is usually living within another living host. At times, it is necessary to eradicate the source (host) to eradicate the organism and eliminate the disease. This is true with rabies and with tuberculosis of cattle. Plague, typhus and a number of other diseases can be controlled by a similar attack against their animal reservoirs.

A common approach used to eradicate the organism is found in the treatment of persons who are infected. If the germ is eradicated at this point, it will not spread to infect other potential hosts. The human source's communicability is controlled by limitation of his/her movements (isolation) and by treatment of the infection. Fundamental to this attack is a system for *finding cases* of communicable diseases. The value of reporting such cases is not in the counting of numbers, but in the clues it gives to finding further sources and contacts.

Case-finding methods include tuberculin tests and chest x-rays for tuberculosis, stool samples for typhoid fever and other intestinal infections, nose and throat cultures for diphtheria and vaginal and urethral smears for gonorrhea.

Many communicable diseases require some type of transmitting agent to spread the disease organisms from the source of a potential host. Common living agents are insects, snails and animals. Inanimate articles, such as a contaminated drinking glass, a handkerchief or a hair comb may spread a disease. This can occur when a germ that does not need to be immediately transported to a new host is deposited on the article by a source; later, the germ enters the new host. Many successful approaches to controlling communicable diseases have been aimed at transmitters of disease.

Attacks made by public health workers at each point in the chain of mosquito-borne disease show how these methods can succeed. The mosquito can be destroyed by use of chemical insecticides, particularly when used on walls of houses where mosquitoes rest after feeding. Breeding places can be eliminated by filling them or by making them unsuitable through spraying with oils and insecticides. Use of nets and screens keeps the mosquito from contact with the potential human host. The person infected with malaria can be isolated from infecting other mosquitos. The healthy person can protect him/herself by taking anti-malarial pills.

Similar measures aimed at other live transmitters are: delousing, rat-proofing, proper garbage disposal and the destruction of flies. Measures related to inanimate transmitters include the thorough cooking of pork, the burning of articles contaminated by a person with tuberculosis, the boiling of water or milk and construction and use of latrines.

Increasing the Resistance of Potential Hosts. Important to the body's ability to resist disease is its general state of health and nutrition. It is well known that a severely malnourished child infected with measles has a far greater chance of dying than the child of normal weight under the same circumstances. It is therefore of great importance to maintain health and promote good nutritional habits if the potential host is to be able to resist disease.

Another way to increase the resistance of the host is accomplished through vaccination, which forms a system of defense within the body. Most communicable diseases, such as tuberculosis, polio, measles, diphtheria, tetanus, etc., can be prevented with immunization.

Personal Hygiene

Personal hygiene includes those protective measures carried out by the individual, which promote health and limit the spread of infectious diseases, chiefly those transmitted by direct personal contact:

1. *Keeping the body clean by bathing.*

    a. Soap and water baths remove dust, dirt, perspiration and other waste materials that harbor germs.

b. Taking cold baths or showers during hot weather helps to prevent prickly heat (heat rash) and other skin infections and rashes.

c. Bathing helps to prevent body lice.

2. *Keeping hands and nails clean* to prevent spreading germs.

a. Hands should be washed in soap and water:

— before preparing or eating food

— before handling any eating utensils

— before feeding babies or other people

— after each use of the latrine

— after changing baby's diaper

— after handling animals or cleaning their pen

— after working in the garden or fields

— after handling a baby or sick person

3. *Brushing the teeth* is important because food sticks to teeth, and if left there, the teeth will decay.

a. Brush the teeth after meals or in the morning and evening.

b. Use clean water. If it is not clean, boil it for 10 minutes.

c. If unable to brush, rinse the mouth with clean water after eating.

d. Use a commercial toothbrush or make one from a twig: select a short, soft wood, non-poisonous twig. Peel off one inch of bark at one end and then pound, chew or shred the peeled end to form the "brush."

e. Use salt and baking soda, clean charcoal or commercial toothpaste. Do not use ash, cinder and/or other coarse materials that may scratch the gums and teeth. Use only your own toothbrush. Wash it in clean water between use.

4. *Caring for the hair.*

   a. The hair should be washed with soap and water every 10 days to 2 weeks. If it is oily, wash it once a week.

   b. Lemon juice can be used in the rinse water to help remove the soap.

   c. Comb and brush the hair daily, using your own comb or brush. Wash the comb and brush every time you wash your hair.

   d. Head lice: These are small insects which cause itching when they bite; they suck the blood of the scalp. To avoid them, shampoo regularly and use your own comb and brush. If lice are present, DDT or other insecticide powder can be dusted on the hair. *Use Caution.* Insecticides are poisonous. Leave the powder 10 days and then wash with soap and water. If kerosene is used, use small amount because it can burn the scalp. It is not as effective as DDT and requires more than one application. Commercial preparations may be available from the health center.

5. *Wearing clean and adequate clothing.*

   a. Skin exposed to wind, dirt, sun, chance scratches and insect bites has a greater possibility of contracting skin diseases. (Sunlight on bare skin, though, is the chief source of Vitamin D, so some exposure is necessary.)

   b. Dirty clothes can carry disease germs and attract body lice; wash clothes often.

   c. Shoes support the feet and protect them from injury, heat, cold, wet and dirt, as well as worms and tetanus and other infections. Shoes that do not fit properly should not be worn, especially by children.

6. *Avoiding the use of common or unclean eating, drinking, or toilet articles of any kind.*

   a. Everyone should use his/her own toothbrush, towel, wash cloth, handkerchief, hair brush, and toilet articles.

   b. Each person should have his/her own glass or cup to drink from. Each child should have his/her own bottle.

7. *Avoiding exposing others to germs* from the nose and mouth, as in spray from coughing, sneezing, laughing, talking, or spitting.

8. *Keeping the living environment clean.* Dirty compounds and communities result in the breeding of mice, rats, roaches, flies, lice, mosquitoes and other things which can carry disease.

a. It is easier for people to keep clean if the living environment is clean.

b. Overcrowding, dampness, lack of ventilation favor disease, especially tuberculosis.

c. To keep a house free from disease-carrying insects and rodents, it should be dry, warm and in a good state of repair. Where insects are disease carriers, it should have screens or mosquito netting.

9. *Sleeping in a clean, properly ventilated room.*

a. Too many people sleeping in one room makes the air uncomfortable, and it is possible to transmit disease from one person to another. Especially tuberculosis.

b. Keep the bed clean by washing and airing the linen regularly.

10. *Cleanliness in keeping and preparing food.*

Foods which are important for health can also be carriers of disease. For example, food which has been fertilized with human wastes, food stored in places where mice, rats and roaches can get to it, or foods such as meat and milk projects which easily spoil or have been exposed to flies and dust, can cause serious illness. To prevent this from happening:

a. Wash all fruits and vegetables in pure water. If food has gone bad, burn or bury it.

b. Wash hands before cooking or eating food.

c. Keep cooking utensils clean.

d. Keep food covered and safe from flies and other household pests.

e. Wash and rinse dishes with water as hot as the hands can stand. Allow them to dry in the air, but protect them from flies, insects, etc.

f. Cook meat thoroughly to kill any germs.

Disposal of Wastes

Wastes include trash, garbage, human excreta, used water and animal waste. Garbage and trash left around the home serve as food for insects and rodents. Flies, roaches, mice and rats often carry germs of communicable diseases such as typhoid fever, dystentary, rat bite fever, food poisoning and cholera. Wastes should not be allowed to accumulate in the home or the yard because they invite disease and illness. Disposing of wastes safely is one of the first steps in preventing disease.

Human waste (feces, urine, nasal discharges, etc.) is dangerous and can carry germs which cause hookworm, typhoid fever, dysentery, schistosomiasis, cholera, roundworm, infectious hepatititis and many other diseases. Few health changes could be more important than helping a community to properly dispose of human wastes. Human waste, left in the open or lightly covered with dirt, quickly spreads throughout the community by means of rainwater, wind, insects, rodents or other ways. This causes contamination of drinking water and food. Disease organisms also find their way directly into the mouths of children, into the skin of farmers, into the eyes of babies; they are a great danger to everyone.

In most areas, the safest and cheapest way to dispose of human wastes is the sanitary privy or latrine. Two types of latrines are available, the hand-flush water type and pit latrines. Hand-flush latrines [1] have the distinct advantage of being almost odorless and can therefore be close to or in the house. They also completely protect against the breeding of flies and other insects. Hand-flush latrines can be built for not much more than the cost of a pit latrine but money can be saved on the shelter as it need not be flyproof. They do require small amounts of water for flushing (less than a liter per flush) and the water cannot be allowed to freeze.[2]

The pit latrine can be built by digging a hole and building a small house over it. Check with the local sanitary inspector to see how deep the hole should be. The latrine should be at least 10 meters from the house and 35 meters from any water source (well, river) and lower than the level of the water source. It should be in a dry place and not over a stream of river. The floor should be covered with tightly fitting boards or bamboo, or a concrete slab. Make a hole in the middle of the floor over the pit you have dug. Cover the hole with a lid of iron, wood or other solid material to keep the hole dark and keep flies out. The cover should always be replaced after using the latrine. Insecticides should be poured into the hole to destroy insect maggots and larvae.

The house over the latrine may be built of wood, bamboo or other materials. A vent in the roof carries odors away, and should be screened so that flies do not enter. Painting or white-washing the latrine inside and out will make it easier to clean and the latrine will last longer. Scrub the inside walls and floor of the latrine with disinfectant, soap and water at least once a week.

When the latrine hole is two-thirds full, move the house, if possible, or burn it for fuel. Fill the hole with dirt. Another hole can be dug and the house put in place or rebuilt over it.

When a sanitary latrine is not available, human waste can be discarded by digging a hole and completely covering the hole after use.

1/ A number of countries, including Thailand, Malaysia and the Republic of China have had considerable success with handflush latrines in rural areas. Detailed instructions on waterseal latrines are available from APHA.

2/ An excellent resource describing the procedure for building a water-seal privy is a booklet entitled *Thailand Water-Seal Privy Program* by Barry Karlin. (Thai-American Audiovisual Service. December 1961).

Garbage consists of food wastes such as bones, peelings and scraps. It should be collected in a container with a tight fitting lid and can be used for fertilizer, animal feed or buried. As fertilizer, place it in a pit, sprinkle a thin coat of lime over it, and cover it with ten inches of dirt to keep flies and animals out. Leave it buried two to three months before using.

Trash such as tin cans, old bottles, rusty nails, old rags, broken dishers, paper and brush provides breeding places for rats. Stagnant puddles and anything that holds water can be breeding places for mosquitoes. Trash should be separated from the family garbage and discarded regularly. Burn what can be burned and bury the rest.

Animal wastes inside or around the house carry disease germs and attract flies which spread the germs. Animals such as cows, chickens, pigs or goats should be penned at a distance from the house. Their wastes can be used as manure (fertilizer) but shouldn't be allowed to attract flies. Store this manure, covered in a special area, away from the house. Wastes from cats and dogs should be cleaned up or covered over to avoid flies and other insects.

Waste water from washing can be used for watering the garden, but never should be left in uncovered containers or allowed to stagnate. Pools of water in the yard are breeding places for mosquitos and other insects. If no piped or closed drainage system exists, a hole can be dug in the ground and filled with rocks. Waste water poured into the hole will filter through the rocks and into the earth.

Using Safe Water

Most of the rural people of the world continue to suffer from a lack of a safe and adequate supply of water for drinking and other uses. Helping the community to understand the importance of clean water and stimulating them to protect their water sources can be an extremely important task. This will require strong community support because you may be asking the people to make difficult but important changes.

The water from an open pond may taste better than water from a protected well. Building safe wells and springs may require hard work and expense. The community must make decisions about where wells will be located, who will maintain them and how to get funds for spare parts or repairs. But the results can be easily worth the effort in protecting the community from such diseases as typhoid fever, dysentary, cholera and the many other water-borne diseases.

Decisions about the location and installation of safe water supplies will probably require outside advice from a sanitarian or an engineers. For example, it will be important to ensure that no latrines are within 35 meters of the water supply and the well is properly sealed.

It is possible to make water safe by boiling it for about 10 minutes. In some communities people do this, often using the water for tea or coffee. Often, however, people object to the change in taste, the need to use expensive fuel and the time required. If water must be boiled:

1. *Boil* the water in a clean container for 10 minutes.

2. Let the water *cool* in a clean container. Cover it while cooling.

3. *Pour* it back and forth between two clean containers. This will add air to the water that was lost by boiling and it will taste better.

4. Use it to:

   - drink
   - wash fruits and vegetables to be eaten raw
   - mix with powdered milk or food
   - make ice
   - brush teeth

5. To store it:

   - keep boiled water in a clean, covered container
   - keep it away from children, flies, rodents, etc. They can contaminate it.

Control of Household Pets

Flies, mosquitos, cockroaches, bedbugs, fleas, ants, ticks, lice, scorpions, rats and mice are some of the most harmful household pests. Their bites can transmit diseases. Flies cause diarrhea and dysentaries, typhoid, cholera, tuberculosis, conjunctivitis (inflammation of the eyes) and worm infestations. Malaria, yellow fever and filariasis are diseases carried by different kinds of mosquitos. Rats and mice destroy property and eat the family's food and food for animals. All of these pests live in dark, damp, dirty places, usually where garbage, trash and stagnant water are found.

Facts about Flies

- The female fly lays her eggs in fresh manure and garbage. She may lay 600-900 eggs during her 30 day life span.
- The eggs hatch into maggots one or two days later and live for about 10 more days, eating the manure and garbage around them.
- They then spend three to six days growing to full-grown flies under the manure or garbage.

- The adult fly then feeds on human and animal wastes. Because the fly has a sticky body covered with thousands of tiny hairs, germs and worm eggs found in the feces of humans are carried on its body and legs.

- Flies carry these germs from feces to food as they constantly fly from one to the other. They also pass germs through their feces and their vomit.

Personal Protective Measures Against Flies

1. Make sure that no human waste matter is left exposed to the air where flies can feed on it. If building a latrine is not possible, dig a hole for feces and cover completely with at least 10 cm of dirt.

2. Keep food and eating utensils covered.

3. Screen houses.

4. Enclose animals away from the house and keep their area clean.

5. Discard all garbage in a covered container or in a pit and cover it with dirt.

6. Bury all dead animals.

7. Use a fly swatter in the house when flies are present.

Facts About Mosquitos

- They bite people and carry germs of malaria, yellow fever and filariasis from the blood of sick people to others.

- They lay their eggs in stagnant water such as lakes, ponds, puddles and waste water that lies motionless in uncovered barrels or drainage ditches.

- These eggs hatch mosquitos in 10-30 days.

- The colder it is, the longer it takes the egg to hatch.

Personal Protective Measures Against Mosquitos

1. If possible, build homes on ground higher than the surrounding area so that water will run off and not stagnate in the yard.

2. Use screens on doors and windows of houses.

3. Use mosquito netting in sleeping quarters.

4. Bury all trash.

5. Do not leave anything in which water or rain can collect and remain open to the air.

6. Use insecticide sprays with care and only when necessary.

Facts About Bedbugs

- They live in clothing and bedding, walls of houses, and in floors and ceilings of houses.
- They live by sucking blood from people when they sleep.
- Once in the house, they multiply rapidly and are hard to get rid of.
- Bed bugs bite and are irritating. Their bites may become open sores which become easily infected without proper hygiene.

Personal Protective Measures Against Bedbugs

1. Take all the clothing and bedding outside and spread it on clothes lines or racks. Spray it with DDT and wash it before using again.

2. Spread the mattress on a flat surface outside and spray it well with insecticide. It is not necessary to wash the mattress after spraying.

3. Take all the food out of the house. Open all drawers and move bed from wall. Spray the walls, floor, ceiling, inside of drawers, bed and anywhere else that bedbugs might hide.

4. One week later, after all these steps have been done, repeat them. This way the eggs laid by the bedbugs will be destroyed. It may be necessary to repeat the spraying a third time before all the bedbugs are killed.

Facts About Lice

- Lice live in a person's clothing and on his/her body. Most commonly, they are found in the hair.
- They bite people and cause blood loss.
- Lice can cause anemia, typhus fever, relapsing fever, impetigo and can spread eye diseases from one person to another.

Personal Protective Measures Against Lice

1. Boil in water all clothing, bedding, towels, combs and brushes used in the household.
2. Bathe all household members with soap and hot water.
3. Dust all bedding and mattresses with DDT. Repeat in one week.
4. Spray the walls and ceilings with DDT.

Facts About Ticks

- Ticks are often found on dogs, cattle, cats, horses and other animals. They sometimes are found on people.
- They bury their head into the skin and can be removed by lighting a match and holding it close to the tick's body. The tick will remove its head, trying to avoid the heat. Do not pull at the tick until it removes its head: the head might be left in the skin and cause infection.
- Ticks may cause virus infections, encephalitis and paralysis, bleeding, Q fever, relapsing fever, and their bites often become infected.

Personal Protective Measures Against Ticks: Prevent ticks by keeping animals out of the home and remove their ticks as they appear.

Facts About Cockroaches

- They live in warm, dark places, usually where garbage is found. They leave their hiding places and come out at night to eat food found lying around.
- They often enter the house in packages of groceries brought in from the market or fields.
- They crawl over food and dishes, leaving behind the germs they carry.
- They carry diseases from sick persons to healthy persons and can cause dysentary.

Personal Protective Measures Against Cockroaches

1. Spray insecticide where cockroaches hide and where they might go at night. Remove food, dishes and cooking or eating utensils before spraying.

2. Do not leave food lying around uncovered.

3. Do not leave garbage in the house.

4. Do not leave dirty dishes lying around.

Facts About Rats

- They carry diseases and destroy property. They also eat the food needed by people and their animals.
- They live any place people live, feeding on garbage and food wherever they can find it.
- They reproduce rapidly and are hard to get rid of.
- Rats can carry meningitis, histoplasmosis, plague, rabies, rat bite fever, schistosomiasis, trichinosis, Chagus' disease and typhus fever.

Personal Protective Measures Against Rats

1. Don't leave garbage around. Keep it covered and outside of the house; advice for burying garbage is found in an earlier part of this chapter.

2. Use traps to kill rats, but be careful if children are around.

3. Poisons are available and should be used with caution. Check with the local sanitation inspector about his/her recommendation. Always wash your hands after handling rat poison. Keep it away from children, food and animals.

A very important step in getting rid of pests is to involve the entire community in a program on pest control. Most of these pests go from one house to another so that one family's efforts may mean little if the neighbors do nothing. Every village family must keep its own home and yard clean and sanitary.

In a latrine building project, people will need to know that human wastes are dangerous, that serious disease can be prevented through the use of latrines, that they are convenient to use, modern, desirable and inexpensive. They will need to know how to build them, maintain them, teach their children to use them, etc. Parents, teachers, leaders, church groups need to be a part of the organized effort. Committees should be organized to plan and implement the project. The educator may need to know about outside resources, how to arrange for a demonstration model, and how to organize a fund-raising campaign.

Mode of Spread	Diseases	Educational Objectives
Direct contact with nasal and throat secretions	Measles, tuberculosis whooping cough, diphtheria, polio	1. Vaccinations, immunizations 2. Early treatment
Use of contaminated articles	Same as above, Trachoma	3. Increase understanding of relationship between certain behavior and spread of diseases
Contact with sores on the skin and dry scabs	Small pox, diphtheria	4. Practices of good personal hygiene
Use of water and foods contaminated by feces	Polio, dysentery typhoid, cholera, worms, infections	Objectives 1—4 as appropriates 5. Adequate site for waste disposal and supply of safe drinking water to break the fecal-oral mode of transmission 6. Control of flies, rodents
Open wound infected	Tetanus	Objectives 1—5
Infection of umbilical cord	Tetanus neonatum	7. Education of mothers and attendants of strict hygenic care of the umbilical stump of newborn children. 8. Education of traditional midwives as to methods and techniques in child birth 9. Disinfection of open wound 10. Immunization of pregnant women

Mode of Spread	Diseases	Educational Objectives
VECTORS:		
Mosquito	Malaria, Yellow Fever	10. Prevent transmission through use of insecticide sprays in homes, filling and draining.
		11. Use of screens and nets (Objectives 2 and 3)
Snail	Schistosomiasis	Objective 5
		12. Reduce snail habitats by draining and filling and use of chemical products (kill the larvaes)
		13. Early detection through periodic stool exams, and treatment.
		14. Adopt modern irrigation and agricultural practices.
Sexual contacts	Syphilis, gonorrhea	Objectives 2, 3 and 4

Educational Activities

Numerous projects within the realm of environmental sanitation, for example, are possible and can involve different groups within the community. It is the function of the health educator to organize the community for action and assist the people in making environmental improvements.

Such projects include:

- construction of a water-drainage system
- the digging of a well
- the digging of garbage pits
- building latrines

Each project has a similar approach for the health educator to take, for example:

In a latrine building project, people will need to know that human wastes are dangerous, that serious disease can be prevented through the use of latrines, that they are convenient to use, modern, desirable and inexpensive. They will need to know how to build them, maintain them, teach their children to use them, etc. Parents, teachers, leaders, church groups need to be a part of the organized effort. Committees should be organized to plan and implement the project. The educator may need to know about outside resources, how to arrange for a demonstration model, and how to organize a fund-raising campaign.

An Innovative Practice in the Philippines

A community program was designed to emphasize preventive services as part of an overall plan for community development. The program, called "Special Integrated Financing Program," is an innovative scheme through which people may borrow money and receive a 2% rebate on the loan interest if they meet the following conditions: 1) no birth for one year, 2) a vegetable garden must be planted, 3) environmental sanitation must be improved, and 4) nutrition content of the diet must be upgraded. The two percent rebate is placed in a special savings account to meet medical expenses.[1]

1/ *The State of the Art of Delivering Low Cost Health Services in Developing Countries*, American Public Health Association, January 1977, page 62.

CHAPTER X

ACCIDENTS: PREVENTING AND MEETING EMERGENCIES

- Control of Bleeding
- Prevention of Contamination and Infection of Open Wounds
- Burns
- Artificial Respiration
- Choking
- Fractures
- Snakebite
- Possible Educational Activities

Accidents are an important and unnecessary cause of death and disability in developing countries, since many of these can be avoided by education and other safety measures.

Vehicle deaths are less numerous where there are less vehicles, but rates per mile are extremely high. Education about avoiding speeding, avoiding drinking when driving, wearing seat belts, wearing helmets when motorcycling, and looking out for children and other pedestrians is no less applicable in developing countries.

Falls. Most communities in developing countries have many unprotected places where falls are likely, which can be corrected through safety surveys and education.

Drowning is an important cause of death in many areas. Education about this hazard and the need to be accompanied when bathing can have an impact.

The potential dangers from other sources of accidental injury, such as burning and poisoning, can be reduced through educational efforts. The most important causes of accidents in your area could be discovered by a survey.

The next few pages discuss the basic information needed to treat several common types of injury.

Ideas about injury treatment education are found in the final section of this chapter.

How to Control Bleeding from a Wound

The loss of two pints of blood is a serious matter; the loss of three pints can cause death. A break in the main blood vessels in the chest or abdomen can cause death in less than 30 seconds! It is important, then, to know how to control bleeding in an emergency. The correct action, performed rapidly at the scene of an accident, can save a life. If a person has a large wound and is bleeding:

1. Stop the bleeding *promptly* by pressing directly on the bleeding area with a *clean* cloth (for example, a handkerchief, piece of clothing, etc.). If a cloth is not available, a *clean* bare hand can be used.

2. If there are no fractures (broken bones), raise the wounded part and support it so that it rests above the heart.

3. Keep the victim calm and lying down.

4. Protect the victim by covering him/her with a blanket if it is cool or cold. Do not apply heat.

5. Give the injured person plain water to drink if he/she feels thirsty. The water should not be hot or cold, and should not be given if the victim is unconscious, partly conscious or nauseous or vomiting.

6. Seek help from a doctor, nurse or person trained in health care. If possible, take the person to the nearest hospital or clinic (dispensary). If medical assistance is not available, or if many hours will pass before assistance is available, it is important to follow the steps outlined below for control of infection.

Prevention of Contamination and Infection of Open Wounds

An open wound is a break in the skin or mucous membrane. There are several types: scrapes, cuts, tears, punctures. The steps to first aid are:

1. Stop the bleeding immediately.

2. Protect the wound from contamination and infection.

3. Obtain medical attention if case is severe.

Since Step 1 has been covered in the preceding pages, emphasis here will be placed on Step 2.

Open wounds can become contaminated with dirt and bacteria and thus become infected. Infection of surface wounds (those that are not deep) can be prevented by appropriate first aid measures.

Wounds without severe bleeding that are not deeper than the skin should be cleansed thoroughly before a bandage is applied.

1. To cleanse a wound, first wash *your* hands with soap and water.
2. Wash in and around the victim's wound to remove germs and other foreign matter.
3. Rinse the wound by flushing with clean water. It is best to use water that has been boiled, then cooled to a comfortable temperature.
4. Blot the wound dry with a clean cloth.
5. Apply a clean bandage, usually of cloth and tie it securely in place. When the bandage gets dirty, remove it and put a new one on.
6. Caution victim to seek medical help if symptoms of infection appear.

The time needed for healing may be greatly lengthened by infection, which is the result of invasion and growth of germs (bacteria) within the tissues of the body. Symptoms of infection include:

1. Swelling of the affected area
2. Redness of the affected area
3. A sensation of heat
4. Throbbing pain
5. Tenderness
6. Fever
7. Pus
8. Swollen lymph glands in the groin, armpit or the neck.
9. Red streaks leading from the wound

The threat of tetanus, or lockjaw, must not be overlooked if a wound becomes infected. If the victim has not received a tetanus booster within the year preceding injury, a booster

shot should be obtained. Persons with severe wounds that become infected and persons with infected wounds who have not been vaccinated against tetanus should seek medical help immediately.

Burns

Burns are classified and treated according to depth or degree of damage to the skin. Often the degree will vary in different parts of the same burned area. (See outline, page 115.)

First-Degree Burns are usually the result of light contact with hot objects, or scalding by hot water or steam. The usual *signs* are:

1. Redness and discoloration
2. Mild swelling and pain
3. Rapid healing

They can be *treated* by:

1. Applying cold, *clean* water or submerging the burned area in cold, clean water.
2. Applying a clean cloth as a bandage, if necessary.

Second-Degree Burns often result from contact with hot liquids and flash burns from gasoline, kerosene or other flammable products. These burns are usually more painful than deeper burns. The usual *signs* are:

1. Deeper than first-degree burns
2. Red or mottled appearance
3. Blisters develop
4. Considerable swelling over several days
5. Wet appearance of skin

In *treating* a second-degree burn:

1. Immerse the part in cold, clean water (not ice water)
2. Apply freshly washed or ironed cloths that have been wrung out in ice water
3. Blot dry, gently

BURN CLASSIFICATION

CLASS	SYMPTOMS
FIRST DEGREE BURNS	• REDDENED OUTER SKIN • SWELLING
SECOND DEGREE BURNS	• REDDENED SKIN • BLISTERS (open or closed) • DAMAGED UNDERSKIN
THIRD DEGREE BURNS	• SKIN IS DESTROYED • UNDERSKIN TISSUE EXPOSED AND DAMAGED • AREA MAY BE CHARRED

4. Apply sterile gauze or clean cloth as a protective bandage

5. Do not break blisters or remove tissues

6. Do not use any antiseptic preparations, ointment, spray or home remedy

7. If arms or legs are affected, keep them raised, using pillows or rolled clothing for support

Third-Degree Burns can result from a flame, burning clothing, immersion in hot water, contact with hot objects, or electricity. Temperature and length of contact are important to know for determining extent of damage. The usual *signs* are:

1. Deep tissues destroyed

2. White, or charred appearance

3. Complete loss of all layers of the skin

To *treat* a third-degree burn:

1. Do not remove any adhered particles or burnt clothing.

2. Cover the burn with thick sterile gauze or a freshly washed or ironed cloth.

3. Elevate the arms or legs if they are involved.

4. For severe facial burns, sit the victim up and seek prompt medical attention if breathing falters.

5. *Do not* immerse an extensively burned area in ice water. A clean cloth wrung out in ice water can be used, but only on the face, hands, or feet.

6. Arrange for transportation to a hospital, if possible.

7. If medical help is not available within an hour and the victim is conscious and not vomiting:

   a. Offer a solution of salt and baking soda:

      1 teaspoon salt
      ½ teaspoon baking soda
      1 liter clean water (preferrably boiled)
      that is neither hot nor cold

b. Allow victim to sip slowly.

c. Offer (over a 15 minute period)

4 ounces (half a glass) to adults
2 ounces to children 1-12 years old
1 ounce of infants under 1 year

Stop if vomiting occurs.

8. Do not apply ointments, grease or home remedies. They could later complicate and interfere with a doctor's treatment.

Artificial Respiration

Some accidents and illnesses can cause a person to stop breathing even though she/he is still alive. Common causes might be blockage of the airways (choking), electrocution, drowning, shock, and illnesses such as diphtheria, asthma or coup. Artificial respiration causes air to flow into and out of the lungs when natural breathing has ceased. Symptoms of respiratory emergencies include:

1. Cessation of breathing movements of the chest

2. Blueness of the tongue, lips, fingernail beds

3. Loss of consciousness

4. Pupils that become dilated (enlarged)

In some cases, artificial respiration may save a little, but it must be started promptly. Most persons will die within 6 minutes or less after breathing stops unless artificial respiration is given.

There are several methods to administer articifial respiration but *mouth-to-mouth* is the best. (See illustration, page 119.) Here are the steps:

1. Place the victim on his back immediately.

2. Use your fingers to clear the mouth and throat. There may be food or other material blocking the movement of air into the lungs.

3. With one hand, grasp the victim's chin. Place your other hand on top of the head and tilt it backward.

WHEN BREATHING STOPS

IF A VICTIM APPEARS TO BE UNCONSCIOUS

TAP VICTIM ON THE SHOULDER AND SHOUT, "ARE YOU OKAY?"

IF THERE IS NO RESPONSE

TILT THE VICTIM'S HEAD, CHIN POINTING UP. Place one hand under the victim's neck and gently lift. At the same time, push with the other hand on the victim's forehead. This will move the tongue away from the back of the throat to open the airway.

IMMEDIATELY LOOK, LISTEN, AND FEEL FOR AIR.
While maintaining the backward head tilt position, place your cheek and ear close to the victim's mouth and nose. Look for the chest to rise and fall while you listen and feel for the return of air. Check for about 5 seconds.

IF THE VICTIM IS NOT BREATHING

GIVE FOUR QUICK BREATHS.
Maintain the backward head tilt, pinch the victim's nose with the hand that is on the victim's forehead to prevent leakage of air, open your mouth wide, take a deep breath, seal your mouth around the victim's mouth, and blow into the victim's mouth with four quick but full breaths just as fast as you can. When blowing, use only enough time between breaths to lift your head slightly for better inhalation. **For an infant,** give gentle puffs and blow through the mouth *and* nose and do not tilt the head back as far as for an adult.

If you do not get an air exchange when you blow, it may help to reposition the head and try again.

AGAIN, LOOK, LISTEN, AND FEEL FOR AIR EXCHANGE.

IF THERE IS STILL NO BREATHING

CHANGE RATE TO ONE BREATH EVERY 5 SECONDS **FOR AN ADULT.**

FOR AN INFANT, GIVE ONE GENTLE PUFF EVERY 3 SECONDS.

MOUTH-TO-NOSE METHOD

The mouth-to-nose method can be used with the sequence described above instead of the mouth-to-mouth method. Maintain the backward head-tilt position with the hand on the victim's forehead. Remove the hand from under the neck and close the victim's mouth. Blow into the victim's nose. Open the victim's mouth for the look, listen, and feel step.

For more information about these and other life-saving techniques, contact your Red Cross chapter for training.

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ARTIFICIAL RESPIRATION

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4. Place the thumb of one hand between the victim's jaws. Grasp the lower teeth and pull the jaw forward. Pinch the victim's nostrils closed with the thumb and index fingers of your other hand. Always keep the victim's head tilted back.

5. Take a deep breath and place your mouth over the victim's mouth. Keep your mouth open wide as you breathe into the victim's lungs. Breathe deeply into the victim, making sure that no air escapes between your lips and the victim's lungs.

6. Repeat steps 5 and 6 every 5 seconds until the victim breathes naturally.

For infants or small children, the procedure is altered slightly:

1. Cover both the mouth and nose of the victim with your mouth.

2. Blow with small puffs of air from your cheeks.

3. Repeat step 2 every 3 seconds.

Your first breath into the victim will let you know if there is anything blocking the airway (throat). If there is, the chest will not rise.

If the obstruction cannot be removed with your fingers, roll the victim to his/her side and give a sharp blow to the victim's back, between the shoulder blades. With a small child, hold him/her by the ankles with head down or lean child forward with his/her chest over your thighs. Give two or three sharp pats between the shoulder blades. This should free any object in the throat. A further discussion of choking follows.

Choking

Choking is the result of obstruction of the airway (throat). (See illustration, page 123.) It sometimes occurs during eating.The most common causes underlying choking on food are:

- a high level of alcohol in the bloodstream
- false teeth (dentures)
- large, partially chewed pieces of food
- bones in fish or chicken

Prevention

1. Cut food in small pieces and chew slowly and thoroughly.

2. Avoid laughing and talking during chewing and swallowing.

TAKE ACTION: FOR CONSCIOUS VICTIM

Repeat steps until effective or until victim becomes unconscious.

TAKE ACTION: FOR UNCONSCIOUS VICTIM

Continue artificial ventilation or CPR, as indicated.

Everyone should learn how to perform the above first aid steps for choking and how to give mouth-to-mouth and cardiopulmonary resuscitation. Call your local Red Cross chapter for information on these and other first aid techniques.

Caution: Abdominal thrusts may cause injury. Do not practice on people.

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3. Avoid excessive intake of alcohol before or during a meal.

4. Restrict children from walking, running or playing while they have food or foreign bodies in their mouths.

5. Keep foreign bodies, such as marbles, dried beans, stones or thumbtacs out of the reach of infants and small children.

Methods for Relieving Obstruction

1. *Back Blows*

   These are a rapid series of sharp whacks given with the hand over the spine and between the shoulder blades. They can be useful with the victim in a standing, lying or sitting position

2. *Abdominal Thrusts*

   These are a rapid series of thrusts to the upper abdomen that force air from the lungs. They can be administered to the victim who is standing, sitting or lying down.

   a. Sitting or standing:

      — Stand behind the victim and wrap your arms around his/her waist.

      — Place the thumb side of your fist against the victim's abdomen, slightly above the navel and below the rib cage.

      — Grasp your fist with the other hand and press it into the victim's abdomen with a *quick upward thrust.*

      — Repeat if necessary.

   b. Lying down:

      — Place victim on his/her back and kneel close to his/her body, or straddle his/her hips.

      — Place one hand in the middle of the abdomen with the heel of that hand slightly above the navel and below the rib cage.

      — Place your other hand on top of the hand already on the victim.

- Rock forward so that your shoulders are directly over the victim's abdomen.
- Press toward the chest with a *quick upward thrust.*
- Repeat if necessary.

3. *Chest Thrust*

This is an alternative technique to the abdominal thrust. It can be especially useful if the victim is far along in pregnancy, or when the victim is so large that your arms cannot encircle the victim's abdomen.

a. Standing or sitting:

- Standing behind the victim, place your arms under the victim's armpits and encircle the victim's chest.
- Place the thumb side of your fist on the breastbone, but *not* at its lower tip (you could injure the heart) and *not* over the lower edge of the rib cage (you could break the ribs or cause injury to the internal organs).
- Grasp your fist with the other hand and exert a *quick backward thrust.*
- Repeat if necessary.

b. Lying:

- Place the victim on his/her back and kneel closely or straddle his/her hips.
- Place your hands on the sides of the victim's chest with the heels of your hands at the level of the nipples but *not* over the lower edge of the rib cage.
- Exert a quick downward and inward thrust with a squeezing motion.
- Repeat if necessary.

Fractures

A fracture is a break or crack in a bone and can be of two types:

1. *Closed* (or simple) fractures are those in which the bone does not break through the skin's surface.
2. *Open* (or complex) fractures are those in which the broken bone protrudes through the skin.

Symptoms of a fracture include:

- Swelling
- Obvious deformities
- Discoloration, often bruising
- Pain or tenderness to touch
- Differences in the shape and length of corresponding bones on the two sides of the body.

Objectives of first aid:

- To maintain an open airway and give artificial respiration if necessary.
- To prevent movement of the injured parts and nearby joints.
- To control bleeding, if present.
- To cleanse and protect open wound, if present.
- To apply splints if the victim must be moved, and if it is possible.
- To remove victim if further danger if present.
- To obtain medical assistance.

Splinting

Splints are applied to the arms, legs or trunk to immobilize and injured part when fracture is suspected, and to decrease pain and the possibility of further injury. The methods described here are for temporary use, until the victim can get to a clinic or hospital. A simple technique is to tie the injured leg to the other one, preferably with padding placed between them; or to bind an injured arm, after padding, to the chest if the elbow is bent, or to the side if the elbow is straight.

Very satisfactory emergency splints can be made from corrugated cardboard, newspapers, boards, straight-sticks, rolled-up blankets, pillows, etc. The splint should be long enough to extend beyond the joints on either side of a suspected fracture. There should be adequate padding between the skin and the splint. The joints should be immobilized above and below the fracture, and splints can be held in place by strips of cloth, large handkerchiefs, neckties, bandages, etc.

If the arm or leg is fractured, check the pulse in the wrist or over the instep and inspect the fingers and toes for swelling or bluishness. If the pulse is weak, or swelling or bluishness occurs, or the victim complains of numbness, tingling sensations, or inability to move the fingers or toes, loosen the ties immediately; they are probably too tight.

Remember:

- The victim should *not* move the injured part.
- The victim should not test for a fracture by moving the part or by trying to walk on a possibly broken leg.
- If there is a possible head, neck or back injury, do *not* allow the victim to move his/her head. Movement could cause paralysis.
- If it is necessary to straighten and splint a deformed limb, place one hand above the break and one below. This supports the area.
- For a fractured leg, have someone grasp the end of the limb and pull gently until splints are applied.

Snakebite

If a person is bitten by a poisonous snake fom the group called pit vipers, he/she will feel immediate pain and the area around the bite will swell rapidly. The skin in the affected area will also change color.

If the bite is by one of the group of snakes that include the coral snake, the cobra or their relatives, there may be slight burning pain and swelling at the wound, nausea, vomiting, dimness of vision, and sweating. The bite of non-poisonous snakes cause little pain or swelling. In the case of such a bite, the necessary treatment is the same as for open wounds. (See procedures outlined earlier in this chapter.)

If a person is bitten by a poisonous snake and you have a snakebite kit, follow its directions carefully. If no kit is available, follow these steps in first aid *within an hour* from when the victim was bitten:

- Keep the victim quiet. Have him/her lie down and remain completely still. Calm him/her.
- If the arm or leg was bitten, immobilize the area and lower it to a position *below* the level of the heart.

- Tie a band or narrow piece of cloth firmly 2 to 4 inches above the bite if it is on an arm or a leg. If the band is adjusted correctly, there will be some oozing of blood from the wound. It should not be so tight that blood does not flow to the hand or the foot. You should be able to insert your index finger under the band when it is in place. If swelling spreads away from the wound, apply another band a few inches above the first, leaving the first one in place.

- Sterilize a knife blade with a flame and use it to make shallow cuts at each fang mark. Do *not* make cross-cut incisions. Do *not* cut deeper than the skin. Beware of cutting muscles and nerves of the hands, fingers, feet, toes or wrist because they lie very close to the skin.

- Suck with your mouth at the bitten area. The poison of the snake will not poison you if you have no open cuts or sores in your mouth. Rinse any fluid from your mouth.

- If possible, wash the wound with soap and clean water, blot dry and apply a clean dressing.

- Ice water or ice can be placed on the wound to ease the pain and swelling. It may slow the absorption of the poison also.

- Do *not* give alcohol in any form.

- If the victim stops breathing, give mouth-to-mouth artificial respiration (See previous section of this chapter).

- Take the victim to the nearest hospital or clinic as soon as possible. Keep the victim lying down if at all possible.

Possible Educational Activities

The parents, teachers, adolescents, health committee members and other groups can be offered demonstrations of various first aid techniques. Role-playing is a possible activity within a group gathering.

A safety committee might be organized which assumes the responsibility for promotion and education of the people about first aid. The group could also distribute basic first aid kits to strategic areas throughout the community, or organize a disaster plan for communities regularly hit by floods, firest, earthquakes, etc.

A system for emergency transportation could be organized. Certain members of the community could be trained in the treatment of burns and open wounds, of fractures, etc., and offer their services to others of the community.

APPENDIX A

Sample Survey

One of the most useful and economical means of gathering information about a population is the sample survey. The instrument used to collect data is known as a questionnaire. Before starting to construct a questionnaire, you should be able to answer the following questions:

a. In what areas do you need information?

b. Why do you need this information?

c. How will you analyze the data collected?

A questionnaire may appear to be easy to construct and use but in fact it requires a great deal of care and expertise. The following guideline should be sufficient for your work in the community. It is not meant to train you in the methods necessary for scientific research. If you are interested in collecting more detailed information, seek assistance from a social scientist in your area.*

Steps in Designing a Sample Survey

I. Constructing the Questionnaire

A. *Before writing the questions, several decisions should be made:*

1. *How to relate the content of the questions to the objectives of the survey.* In certain studies such as population census, the relationship between the goals of the survey and the questions is usually obvious. But when the aim is to obtain information on motivation, intentions, feelings, etc., the wording of questions is more difficult.

When choosing issues to be raised, how to ask the questions and what vocabulary to use, try to be sensitive to people's backgrounds. A common problem found with inexperienced personnel in the field of survey research is the tendency to assume that the respondent has the same level of knowledge in the area studies as they do. Following are some reasons that may explain the respondent's inability to answer a given question:

a. The respondent may not have enough knowledge in a given field;

b. the respondent does not have access to the information. This is true in studies which ask respondents to report about the characteristics of other family members or neighbors.

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*The American Public Health Association will publish a monograph on "A Survey Instrument for Describing Low Cost Health Delivery Systems in Developing Countries" which includes a detailed questionnaire. For information, write to APHA/IHP, 1015 — 18th Street, N.W., Washington, D.C. 20036.

c. The respondent has forgotten facts that happened in the past.

d. The respondent may not understand the question.

2. *Wording of questions*

Having decided about the content of the questions, you should then give attention to the actual wording of these questions. Precise, clearly-worded questions will give you clear answers. Following are some suggestions you can use in writing them:

a. *The language should be simple*, direct and at a level which can be understood by all respondents. You should avoid two extremes: don't use technical terms and jargon which are familiar only to those with a certain level of education and avoid "talking down" to the respondent by using ungrammatical constructions and colloquial phrases.

b. *The question should be specific and should deal with only one idea.* For example, if a respondent were asked "Do you think that the community needs more family privies and are you planning to build one for your family?" The answer could be "No." — which might mean that he/she does not think that the community needs more privies or it might mean that the community does need more privies, but that she/he is not going to build one for the family. In any case, there is always a risk that the respondent is answering "yes" or "no" to only one part of the question.

To avoid these difficulties, it is better to limit the question to a single issue and then combine the responses later if this is necessary.

c. *The question should not make unnecessary assumptions about the respondent.* For example, the question "What is your present occupation?" assumes that the respondent actually has an occupation and would not be applicable to those who are unemployed. To avoid those dangers, it is best to use what is known as a "filter" or the "skip pattern" device. These questions have at least two parts: the first determines whether or not the respondent qualifies for further investigations, while the second part will give more detailed information on those who qualify. For example:

(1) "Have you ever worked?"

(a) yes (b) no (skip to question 2)

If yes,

"What was your occupation?"

d. *Avoid using indefinite words.* One type consists of words that are indefinite in time, such as "frequently," "often," "rarely," etc. "Frequently" may mean "once a day" or "once a week," etc.

There are, of course, many other ways in which questions can be unclear, but these examples serve to illustrate some of the more common mistakes.

3. *Types of questions*

There are basically two types of questions used in a questionnaire: the "closed" and "open ended" questions. The first one is illustrated by items such as:

"Do you think that the drinking water supply of the community is:

a. quite good?"
b. only fair?"
c. not good?"

where the respondent is asked to choose one out of a list of possible answers.

With "open-ended" questions, the respondent is free to use his/her own words to reply. For example: "How satisfied are you with the community's drinking water supply? Why do you feel this way?" The majority of questionnaires contain both "open-ended" and "closed" questions.

4. *Ordering the questions*

There is no correct format for a questionnaire but certain principles are found to aid efficiency. These principles are:

a. The first impressions should be that the questionnaire is relevant, clear and easy to complete.

b. The first questions should ordinarily be terms that are emotionally neutral and can be easily answered.

c. The questionnaire should be as short as possible. Do not include questions on the basis that information might be useful for some purpose at some time in the future.

d. The questions should follow each other in a logical order and should not be repetitive, except when you are attempting to be sure that you are getting accurate information.

5. *Culturally sensitive questions*

In every culture there are some questions that cannot be asked, or must be asked very carefully in a survey. Sensitive questions should be carefully written during the initial drafting of the questionnaire and carefully analyzed for possible revision after the pretest (discussed below).

B. *Types of Questionnaires*

There are two types of questionnaires:

1. The self-administered questionnaire in which the respondent completes the answers to the questions.

2. The interview-questionnaire in which the questions are asked and recorded by an interviewer.

Advantages and disadvantages are found in both methods. However, for your work in the community, you might consider using the interview-questionnaire which will give you an opportunity to get to know the people on a personal basis. The interview questionnaire has the following advantages:

1. It reduces the problem of non-response. The presence of the interviewer can sometimes serve as an incentive to respond.

2. It can be used with persons of almost all educational levels.

3. It allows probing for more detailed information and the interviewer can clarify misinterpretations. It is also possible to combine the two methods. The interviewer can visit the respondent, explain the purpose of the study and leave the questionnaire to be completed with the respondent.

II. The Pre-test

Once the questionnaire has been assembled, it should be tried out with people similar to those to whom it is to be administered. That is, it should be administered to households not included in the sample (See Section III).

It is only by doing this that errors and confusing questions can be corrected before time and effort are wasted on the actual survey. Five or 10 interviews are enough to know if the questionnaire works well or not. After the pre-test interviews are taken, you should review the questionnaire, any inadequacies should be corrected, and, ideally, the modified questionnaire tested again. Following are some points you should consider in the pre-test.

A. Does the question ask for information that is needed for the purposes of the survey? Are you sure you need to ask this question?

B. Are the questions and words interpreted in the same way by people of different social groups, ethnic groups, educational level, sex and locations?

C. Are there certain questions which seem to create irritation or embarrassment?

D. Are any questions confusing to the respondent? What would make these questions more clear?

E. Is the questionnaire too long?

F. Is there enough space to record the answer? Nothing is more annoying to the respondent or to the interviewer than having to write a lot of information into too small a space.

G. Are there repetitive questions?

Pre-test is an essential part of questionnaire design and should not be omitted on the grounds that the questionnaire can be properly evaluated by you and your team of local people.

III. Selection of the Sample

It is nearly impossible for you to ask everybody in the community a set of questions. What you can do is to select a small group of people (the sample) to whom you will administer your questionnaire. The aim of this process is to obtain information from the sample which will apply to the total population of the community when the information gathered is analyzed.

There are several sampling techniques, but for the purpose of your study, you need not get into complicated statistical calculations. Following is one simple method:

> Make a list of all the households street by street or block by block, then select one household out of every five, 10 or 15 households, depending on the size of your sample.

For your study, 20 to 30 interviews are sufficient. Select equal numbers of male and female respondents. Very often, the community may have several different ethnic or social groups. In this case, be sure to include in your sample representatives of each major group, in numbers proportional to its size.

Remember that the population of your sample must represent and have as much as possible the characteristics of the population of the whole community.

IV. Interviewing

You must keep in mind that the questionnaire is a tool that helps you to collect information for a better understanding of the community. Accept answers without showing any doubt; do not change replies that do not sound correct to you.

First, set up a friendly relationship with the respondent. Explain the purpose of the study in such a way that the respondent's curiosity and interest are stimulated. He/she must see that the study is worthwhile and that his/her coopration is needed. Another important aspect of interviewing is probing. This is the technique used by the interviewer to encourage and stimulate the respondent to give further details. You can use a neutral question or comment such as "What do you mean?" or "I see" or remain silent, suggesting to your respondent you understand the answer given but you know that she/he has more to say.

The important point to keep in mind is that you should not impose your ideas upon your respondent to a point that she/he feels obligated to give the answer that you want — an answer that does not reflect his/her own feelings.

V. Analysis of the Data Collected

In conducting the community survey, your goal is not to gather statistical information such as the number of persons in different age groups or the number of persons having a certain illness, but rather to gain a better understanding of the people's traditions, knowledge and beliefs of the community's felt needs, of what could and should be done for the well-being of the people.

For example, if you want to know what the community thinks about the services given at the health clinic, your analysis may present itself under this form:

"Reasons for not using the health center by ...."

a. sex (male/female)

b. marital status (single, married, divorced, widow(er)

c. education (know how to read and write, primary education, secondary education, etc. ...)

d. income

e. location

f. and others

Examining the responses to this question for each of these categories will help you to understand why the health center is not used. For example, the location may not be too convenient for some people because of the lack of public transportation, or women say that the midwife-nurse's manners are rude, or the villagers, especially those with litte education, consider the health center as the place for dying patients. This kind of information will help you to plan your educational activities accordingly.

APPENDIX B

COLLECTING INFORMATION NEEDED IN HEALTH EDUCATION

Examples of questions which could be included in a community survey questionnaire are given below. If you are specifically interested in one area (for example in the field of child nutrition or environmental sanitation or personal hygiene) you may want to add more questions related to the area of interest. Remember to keep your questionnaire as short and concise as possible. The sample questions are of the following types:

A. Responses to questions 1 to 8 give personal information about the respondent and his/her family. These are easily answered questions for most people and can be placed at the beginning of the questionnaire.

B. Responses to questions 9 and 10 provide information about the occupation of the community residents; unemployment and its causes.

C. Responses to questions 11 to 15 show which diseases occur most frequently in the community; beliefs and practices regarding health and illness; and the health needs felt by the residents.

D. Responses to questions 16 to 18 give the reasons why local health services are or are not used by the people and where they go for help.

E. Responses to questions 19 and 20 give information about people's beliefs and practices related to the nutrition of children.

Example of a survey questionnaire

1. What is your name? _____

2. How old are you? _____

3. Sex: Male _____ Female _____

4. Address: _____

   _____

5. Have you ever been married? ( ) yes ( ) no

   If yes, ask:

6. How many children do you have? _____

7. How many are living with you? _____

8. Can you give their names and ages?

Name	Age	Sex
a.		
b.		
c.		

Be cautious: if your respondent does not want to give you the names of the children, do not insist.

9. Is your husband/wife working? ( ) yes ( ) no

If yes, ask:

a. What is his/her occupation?

If no, ask:

a. Why not? Probe _____

_____

10. Are you working? ( ) yes ( ) no

If yes, ask:

a. What is your occupation?

If no, ask:

a. Why not? Probe _____

_____

11. Does your family have good health?
Probe _____

_____

_____

12. What kind of health problems has your family had?

a. Who was sick?

name: _____

age: _____

sex: _____

b. Describe the illness: _____

_____

c. Is the person still sick? ( ) yes ( ) no

d. What kind of treatment was given? _____

_____

_____

(Repeat for each sick member of family.)

13. In your opinion, which illnesses cause the most sickness and death for the people in the community?

a. _____

b. _____

c. _____

d. _____

(For the first illness mentioned, ask the following)

13.a.1. Are there other names that people use to describe _____
(mention the illness listed above under 13.a)

13.a.2. What might cause people to get this disease? _____

_____

_____

What else might cause it? _____

_____

_____

13.a.3. If you thought that someone in your family had this disease, what would you do?

_____

_____

If it still didn't help, what would you do? _____

_____

13.a.4. What can people do to protect themselves against this disease? _____

_____

_____

What else? _____

_____

13.a.5. (Repeat above series of questions for each disease or symptom listed in question 13.)

14. (In this section, ask specificially about diseases which are common, but were not mentioned. For example: "Have you ever heard of a disease called tuberculosis?" If the answer is "yes," ask series of questions as in question 13. If the answer is "no," probe: "Have you ever heard of a disease which causes people to cough up blood? If the answer is "yes," ask series of questions as in question 13.)

15. What things do you believe are most needed to improved the health of people in the community? Probe _____

_____

_____

16. Where do you usually go for help with your family's health problems? Probe _____

_____

17. Where is the nearest health center? _____

_____

18. Has any member of your family ever used it? ( ) yes ( ) no

If no, ask:

a. Why has no one in your family ever used the local health center. Probe _____

_____

_____

If yes, ask:

b. What do you think of the quality of services of the local health center? Probe ___

_____

_____

Now, we would like to ask a few questions about bringing up your children.

19. Did you/your wife breast feed your child? ( ) yes ( ) no

(Note: For people who are not parents, ask "Do you feel that children should be breast fed?")

If no, ask:

a. Why did you not breast feed your child? Probe _____

_____

_____

20. At what age do you begin to feed your child solid foods in addition to your milk (or formula?) _____ months

21. What are the first solid foods that should be given to a baby? Probe _____

_____

_____

APPENDIX C

Examples of Educational Methods and Aids

1. A Demonstration
2. A Puppet Play
3. Flip Charts
4. Figures for a Flannelgraph
5. Road to Health Chart
6. Radio Spot Announcements

1. A GUIDE FOR PLANNING A DEMONSTRATION MEETING ON "DRINK SAFE WATER"*

Prepare for meeting — Ahead of time

1. Notify people of the day, time and place where the demonstration will be given.
2. Talk with your village worker and health officials to learn all you can about:
   - Where people in the village get water for drinking.
   - What kinds of sickness in the village may come from unsafe water.
   - What makes water safe.
   - What should *safe* water be used for.

Day of demonstration

1. Get ready what you need for the demonstration
   - Container for water before boiling
   - Clean cloth and clean vessel for straining water
   - Pot for boiling water
   - Clean covered vessel for storing water
   - Wood or other fuel for fire
2. Practice your demonstration
3. Check the meeting place to see if there are enough seats, light and ventilation for people to be comfortable.
4. Arrange chairs and your demonstration equipment.

---

*From *Homemaking Handbook;* AID/USDA; Washington, D.C.; March 1971; pp. 191-192.

Conduct meeting and give demonstration

1. Opening the meeting:

   - Welcome the people
   - Explain your job as leader
   - Explain where your information comes from

2. Discuss the importance of using safe water in the home. Talk, ask questions and get people to talk about:

   - What is meant by safe water?
   - Where people in the village get their water for household use?
   - What diseases or illness may come from using unsafe water-especially for babies and young children?
   - Explain how water can be made safe by boiling.

   Discuss the need to use safe water for:

   - Drinking
   - Mixing powdered milk
   - Bathing baby
   - Washing dishes, etc.

   Wash your hands with soap. Explain that this is always necessary before working with drinking water.

3. Give the demonstration

Important steps	Points to emphasize
(a) Strain the water	Into clean utensil. Use a clean cloth. Straining will not make water safer but will remove dirt and make it look cleaner. May need to strain several times.

Important steps	Points to emphasize
(b) Boil the water	Boil it for 10 minutes to make it safe. While the water is boiling you can review the importance of safe water and the reasons for boiling water. Wait until the water starts to boil to begin counting time.
(c) Cool the water	Let the water cool in the pot used for boiling or other clean containers. Cover it with a clean cloth.
(d) Prepare the container to store water in	Wash it in hot soapy water. Rinse it with safe water.
(e) Pour water slowly into container	Pouring water from one container to another adds air and makes boiled water taste better.
(f) Cover and store water for using.	

4. Summarize:

   — Go over the important points again

   — Ask for questions

   — Find out how many will agree to start boiling water

   — Plan for your next meeting

2. A PUPPET PLAY*

(Translation — from Spanish)

THE CAST:

MAMA:	A POTATO
PAPA:	A CARROT
BABY:	A BEET
NURSE:	A YUCA

THE PLAY

(Mama attending the child who is crying)

Mama: Oh, what's the matter my boy? Why are you crying so?

Child: Oh, oh, oh.

Mama: Tell me what's the matter? Are you sick?

Child: Oh, my stomach. Oh, I have a stomach ache.

Mama: Poor boy, what did you eat? The stew was good .... what could it be?

Child: Oh, oh, oh, I have to (psst, psst) .... (he exits).

Mama: Oh, Ave Maria, what does my poor boy have? He is very sick.

(Enters the Husband)

Mama: How are you? How did it go?

Papa: Oh fair. I am very sick. I don't know what's the matter, but I don't have any energy these days. I feel very weak. Do you have coffee?

Mama: Yes, here it is. See, our son doesn't feel well, either. He has cried and cried all afternoon. He has a stomach ache and diarrhea and now he began to vomit.

Mama: Yes, he is very sick. And you're sick, too .... two patients in the house.

(Enters the Child)

*Used as a clausura for a series of health talks given in the schools in the municipio of Dagua, Valle, Colombia. Written by Barbara Williams and Rebecca Willy, Peace Corps Volunteers.

Mama: Poor kid. Do you feel better?

Child: No, I feel horrible.

Papa: Come here son. What do you have?

Child: Oh, it really hurts here. Oh, excuse me .... (he exits)

Papa: He is sick. We are in bad shape. I also hurt myself today coming home. I don't know what I stepped on. Look at my foot, the blood. It really hurts .... it's swollen. Bring me a cloth to bind it.

(Enters the Child)

Papa: See, don't worry. Now we are bringing a little something for the pains. Did you eat something strange?

Child: No, nothing. The same as always, Papa. Oh, oh, oh.

Papa: Poor boy, go to bed.

(Exits the child and enters the Mama)

Mama: Here is the cloth. What did the boy do? Look at that foot.

Papa: Thanks, Oh, he went to lie down. What can we do for the poor kid? What is there to give him?

(Enters the boy)

Child: Oh, oh (doubled over) .... (exits for the field)

Mama: He is very upset .... never has the boy been more sick. I am afraid to give him any remedy without knowing what he has.

Papa: You are right.

Child: (Stuttering) Oh, I wish I was dead.

Mama: Again? Poor child, go to bed. I'll be right in.

(Exits the child)

Mama: Look Papa. This boy is very sick (grave). Go find a doctor or a nurse. Which ever can come, but quickly, do you hear?

Papa: Yes, I am also worried to see him like this. I am going. Until later. (Exits)

Mama: Oh, Ave Maria. How sad to see the boy suffer like that. I sure hope someone comes quickly to cure him.

(Enter the Papa and the Nurse)

They greet: What's up, how are you, how's it going?

Mama: Thanks for having come so soon. The boy is very sick. I don't know what to do with him. All day he has been crying and he has a stomach ache, diarrhea, and has vomited. Oh, please look at him and see what he has. This way. Go ahead.

(Exits the Nurse, sees the child, comes back:)

Nurse: I examined him and here is the medicine that will make him better. But he is very sick.

Mama: Oh, my poor boy. Thank you. What does he have?

Nurse: A very common thing, which you can detect easily.

Papa: Yes? What is it?

Nurse: It is a little animal, very small that causes sicknesses like the one the boy has.

Papa: Do you mean there are little animals living in the stomach of our child?

Nurse: Yes.

Mama: But how do they enter?

Nurse: Well, I will show you. With the help of the students (who already know of amoebas, parasites, and worms) I am going to explain it to you. Which of you can explain to this woman how her child got sick?

Explanation by student about bad water, what it contains. Nurse draws pictures on the blackboard: glass of water, someone drinking and what happens inside.

Mama: Oh, don't tell me. Do you mean the water contains little animals? And you can't see them? What a thing? And I am drinking that water.

Nurse: Students, help her. What can she do with the water to make it good water? .... Yes, boil it. For how long? Between five and ten minutes. That way we kill the microbes and amoebas in the water.

Nurse: (to the Mama) And another thing, I notice you don't use a latrine, is that right?

Mama: No, we don't have a latrine. A while ago we thought of installing a latrine and now we know the importance of using a latrine.

Nurse: You see, students, what is the importance of using a latrine? For what purpose?

Nurse Draws: excrement on the ground, foot stepping on excrements. How plants get contaminated, how water gets contaminated. Shows how when excrement is put in the ground it cannot reach the naked foot, the vegetable garden, the water we drink.

Nurse: You have suffered from many sicknesses. If I remember well, I have visited you various times to treat a sick member of this family. And do you know another reason why you get sick? Look here on the table where you have placed the bread, the sugar, and other things to eat. There are flys crawling on the food ....

Children (to the class), what should she do? Yes, cover the food so the flies that carry germs on their legs don't crawl on it.

(to the family) Where do you throw the garbage?

Mama: Ay, we throw the garbage outside but very far from the house.

Nurse: But that doesn't matter for it's still close enough to attract flys. The flys grow and bring, like we said, germs on their legs.

Nurse: And, students, what can she do with the garbage? Yes, throw it in a hole and then cover it with earth. And what else can she do? Burn it well.

Mama: Another thing while you're here, nurse. My husband has also become sick, look how pale he is.

Papa: Me? No, it's nothing. I always go to work and come home at night. It's true I have a few pains here in my stomach, but that's nothing.

Mama: What do you mean it's nothing? You came in today from the field complaining and grumbling that you felt weak. That you didn't have any energy.

Nurse: Fine, right here is the problem. (She points to his bare foot.) You, Mr. Hortaliza, with these pains in the stomach and this fatigue, are a victim of the thieves of good health. The robbers of health are the worms that are inside your body, sucking your blood, sapping your energies, and giving you anemia. And do you know how the thieves enter?

She points to the same drawing of the foot as used for the latrine illustration. Asks students to explain.

Nurse: One way to avoid the germs, that is to kill them, so you don't get sick, is to always wash your hands; when, students? Yes always wash your hands before you eat and after you go to the toilet.

Mama: Well, if that's true, by ridding the dirt from our hands we also rid the germs that are in the dirt. I have to admit that I have been lazy about this.

Nurse: And notice the importance of a daily bath. Just as you rid the dirt from your body, you rid the germs from your skin so it can breathe and also it gives us a good appearance.

Mama: Yes, you have reminded us of many health habits that perhaps we already knew, but we have forgotten.

Nurse: And, while we are speaking of health, don't forget to take the boy to the Health Clinic for his vaccination. That's another way to avoid sicknesses.

Papa: Now, with so many good ideas, I am inspired to write a poem .... Hmmmm .... Do you want to hear it? Here it is .... Hmmmm .... Got it!

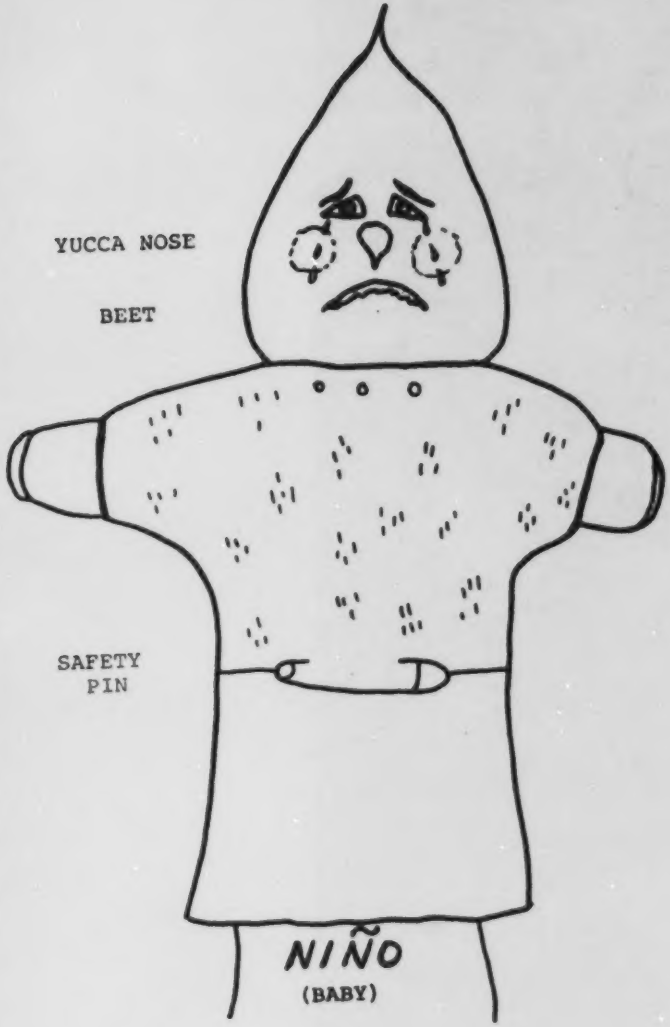
BUILD YOUR LATRINE
DRINK BOILED WATER
ALWAYS WALK WITH SHOES
INSURE YOUR GOOD HEALTH

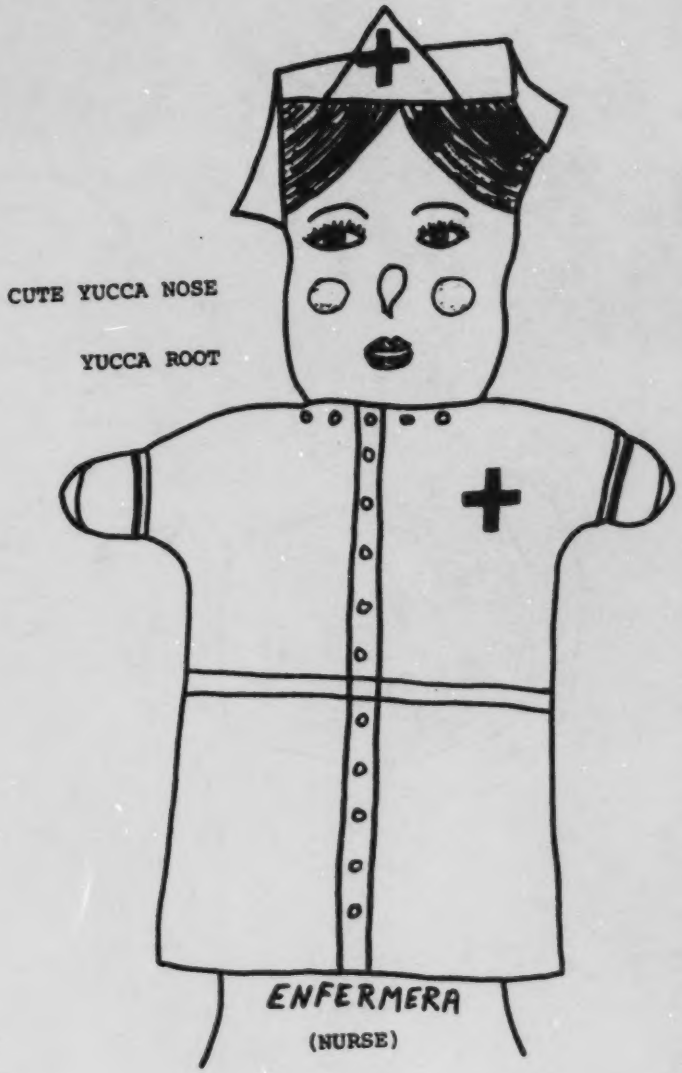
ALWAYS WASH YOUR HANDS
COVER YOUR FOOD
GET YOUR VACCINATIONS
AND YOU WILL HAVE A HEALTHY LIFE

INSTRUCTIONS FOR MAKING PUPPETS

The clothes are simply made — two pieces of cloth sewn together and painted on. The heads are made of local vegetables or balls made from cloth, or leaves, or grass, made with a hollow to fit three fingers. It is advisable to put tin foil or other paper inside to protect your fingers from touching the vegetable, as these puppets have the obvious disadvantage of being quite short lived. We used tempera paints for the facial expressions. The Mama has a very worried look, the Baby eternally crying (he's very sick), the Papa a worn tired face, and the Nurse bright, pretty and ready to save the sick family.

The play is a review, depending on the previous knowledge of the school children. The play includes children (or they could be grown-ups just as well), for the Nurse calls on them to help teach the family some basic health rules. As a prop we also depended on the blackboard, the Nurse sketching the same things that we had presented before in the talks; the end of the play also contains a review, with the aim of increasing learning through repetition.


YUCCA NOSE
BEET
SAFETY PIN
NIÑO
(BABY)


CUTE YUCCA NOSE
YUCCA ROOT
ENFERMERA
(NURSE)

A piece of cloth wrapped around the head as the villagers wear it
Yucca nose stuck on with toothpick
Straight pins
A few distraught hairs, made out of yarn
Potato face, painted
MAMÁ

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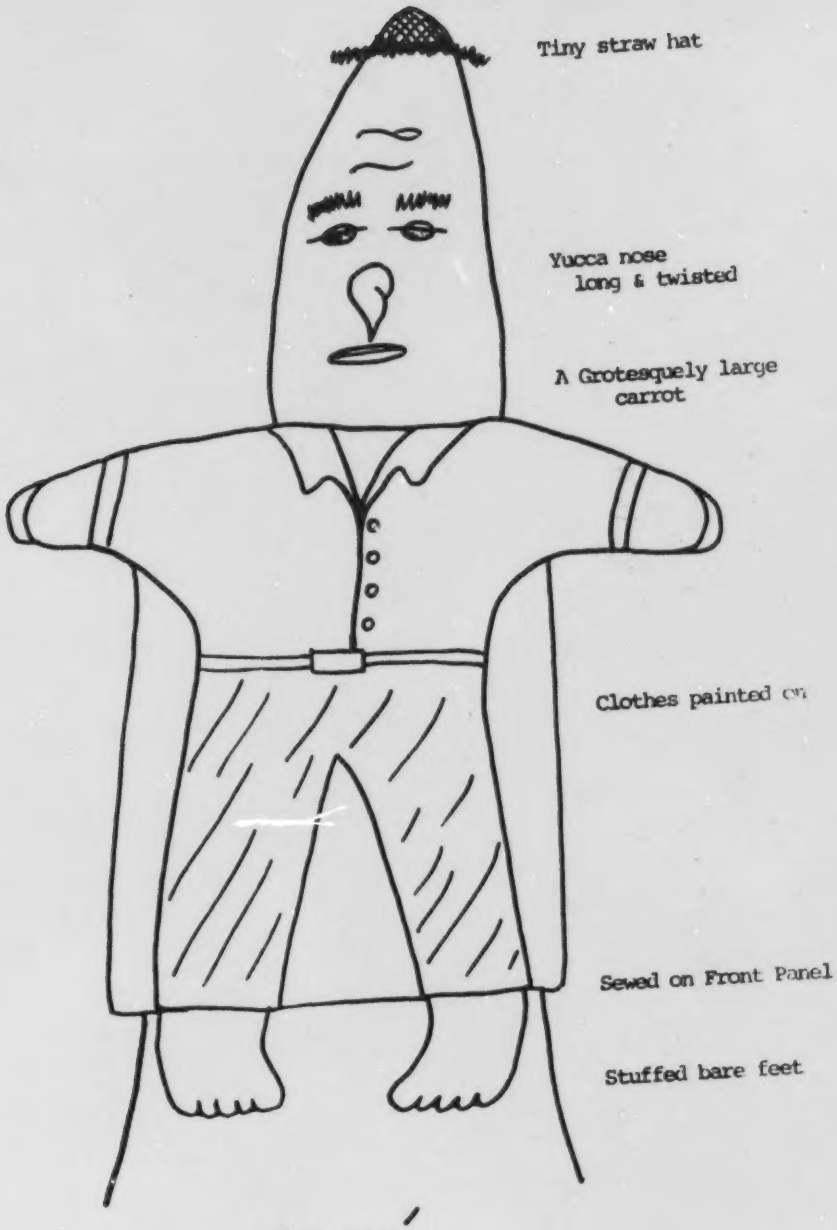

PAPÁ

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3 FLIP CHARTS

An example of a flip chart used by Peace Corps Volunteers follows: An effective visual aid, such flip charts are simple to make and easy to transport from place to place. Reduced in size here, the actual flip chart sheets are 17" X 22", stapled at the top to turn easily as the story unfolds.

MINISTERIO DE SALUD PUBLICA
COLOMBIA
SECCION DE EDUCACION SANITARIA
Y SERVICIO SOCIAL

En colaboración con los
Cuerpos de Paz de los Estados Unidos

Front cover

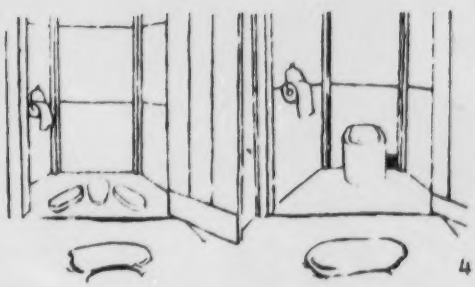
EL ASEO Y CUIDADO DE LA LETRINA DEFIENDEN NUESTRA SALUD.

2

Y LE DAN A NUESTRA CASA BONITA VISTA.

3

EN COLOMBIA USAMOS ESTAS DOS CLASES DE LETRINAS AMBAS CLASES SON BUENAS.



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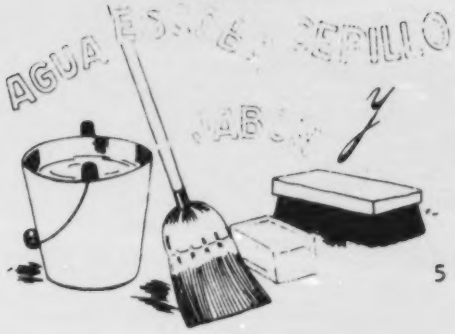
PARA LIMPIAR LA LETRINA NECESITAMOS ESTAS COSAS: AGUA, JABON, CEPILLO O ESCOBA.

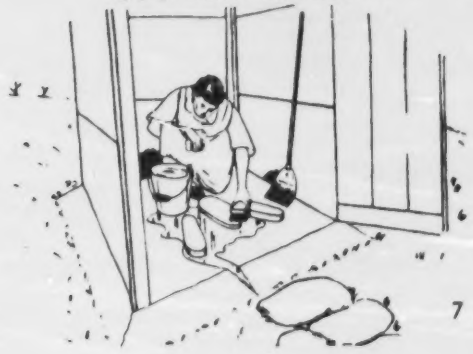


5

SI SE LAVA LA LETRINA CON AGUA Y JABON MUCHAS VECES SE ACABAN LOS MICROBIOS Y LOS MALOS OLORES.

6

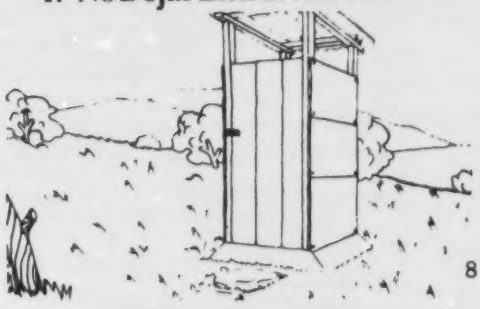
LAVE BIEN LOS BORDES DEL HOYO, EL PISO Y LA TAPA POR SUS DOS LADOS.



7

TENGA SIEMPRE CERRADA LA PUERTA DE LA LETRINA PARA:

1. TENERLA LIMPIA.
2. DARLE BONITA VISTA.
3. NO DAÑAR LA CASETA.
4. No Dejar Entrar Animales.



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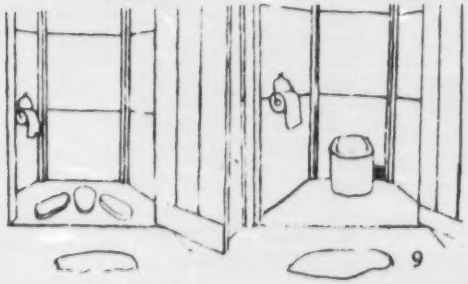
TENGA LA LETRINA TAPADA CUANDO NO LA USE, PARA:

1. No Dejar Entrar las Moscas y Mosquitos.
2. Acabar con los Malos Olores.



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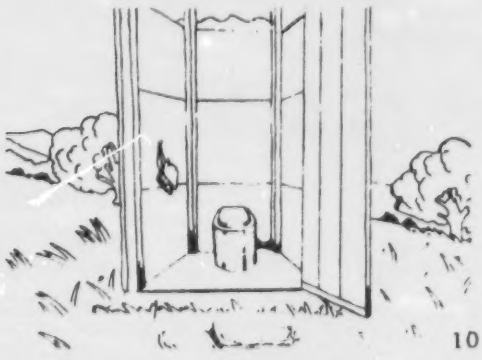
PONGA PAPEL LIMPIO EN UNA CAJA O EN UN GANCHO, ASI:



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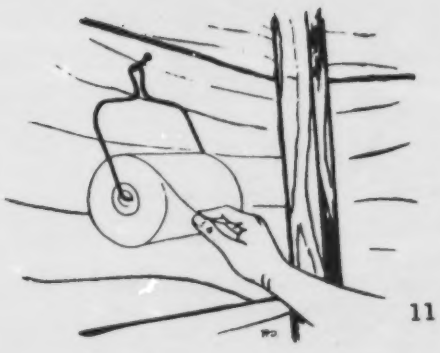
O, SI TIENE PAPEL HIGIENICO,

PONGALO ASI:



11

Bote todos los papeles sucios que use en la letrina dentro del hoyo.

NO BOTE LAS BASURAS DE LA CASA DENTRO DE LA LETRINA.

13

Ayude a los niños pequeños

a lavarse las manos

DESPUES DE IR A LA LETRINA.

15

LAVESE las manos

con agua y jabón:

1. DESPUES DE IR A LA LETRINA

2. DESPUES DE LAVAR LA LETRINA.

12

Ayude a los niños pequeños en la casa a sentarse en la letrina.

1. PARA QUE NO TENGAN MIEDO DE CAERSE.

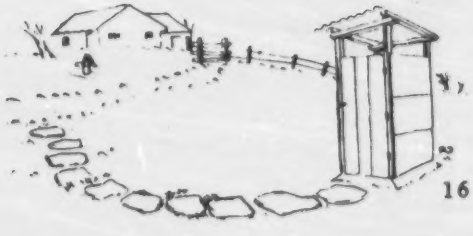
2. PARA FORMARLES HABITOS BUENOS PARA USARLA.

14

El buen uso y cuidado de la LETRINA

1. DEFIENDEN NUESTRA SALUD

2. LE DAN A NUESTRA CASA BONITA VISTA.



16

HOW TO GIVE YOUR BABY A BATH

1. Materials for baby bath

جربي أو لا حرارة الماء

2. Test temperature of water

اغسلي ظهر طفلك هكذا

3. Hold baby while bathing

اجلسي الطفل في الطشت

4. Support baby to wash back

نشفى الطفل جيدا بعد الغسل

5. Dry baby thoroughly

البسى الطفل حالا

6. Dress baby

خفضى طفلك كما ترين فى الصورة

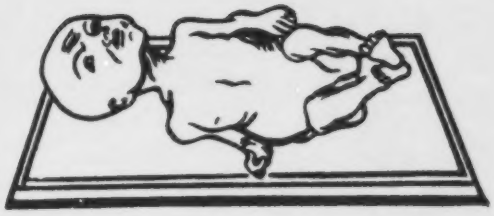
7. Bath time is a happy time

الطفل النظيف دائم السرور صحيح الجسم

8. A clean baby is happy

4. FIGURES FOR A FLANNELGRAPH

Here are some basic figures which might be adapted for use on a flannelgraph. Several topic areas are depicted. Care must be made to adapt the figures to the cultural setting in which they will be used.



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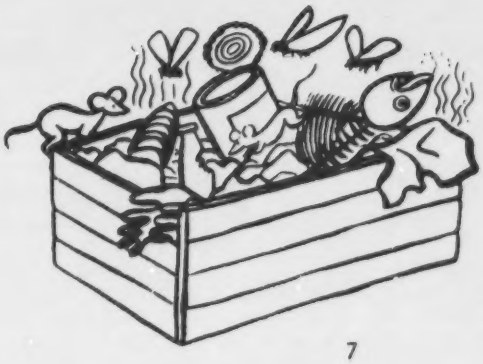

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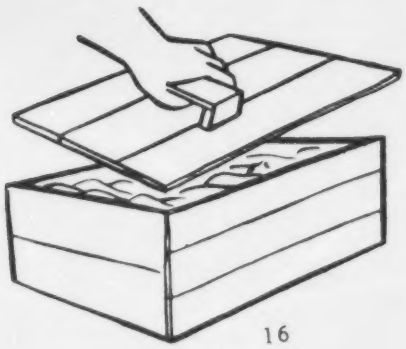

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5. THE ROAD TO HEALTH CHART*

The Road to Health Chart is supplied to the mother; it is considered to be her property and not that of the clinic. Experience has shown that few get lost. In handing the card to the mother, the medical worker is increasing her sense of responsibility for the health of the child, which is a useful step in her own health education. She is taught to understand that her child should "walk along the path" on the chart and how to prevent the child from straying downwards from it. She is instructed to take the chart to any other medical center that the child may attend. This is particularly important because it provides a new medical attendant not only with the growth rate but also with the immunization status and the disease history of the child.

HOW BEST TO USE THE ROAD TO HEALTH CHART

Completing the Chart

- When the child is first seen, the month of the child's birth should be entered in the first space of the calendar followed by all months for the first five years. Outline the month of birth for each year in darker print before filling out the rest of the chart.

- At each visit, the child's weight and month of visit should be noted by a large dot in that month's column against the correct weight. The movement of the weight curve is determined by connecting the dots for each visit.

Note: Enter against this curve such incidents as cessation of breastfeeding, the birth of a sibling or major diseases, etc.

- All treatment received, past and recent medical history, nutritional status, inoculations and major illnesses should be entered on the chart as well as factors which place the child in a "high risk" category. Any indication for special care should be written in a prominent position on the card.

These high risk factors may include any of the following: 1) a maternal weight below 43.5 kg, 2) birth order greater than seven, 3) death of either parent or a broken marriage, 4) death of more than four siblings, especially those occurring between one and 12 months of age, 5) birth weight below 2.4 kg, 6) multiple births, 7) failure to gain 500 grams a month during the first trimester or 250 grams a month during the second trimester of life, 8) breast infections in the mother and difficulties in breastfeeding, particularly those secondary to psychiatric illness in the mother, and 9) an episode of measles, whooping cough, and severe or repeated diarrhea in the early months of life.

Reading the Chart

- At each visit the child's weight should be compared with the weight of the previous visit. The child's weight curve should be following a path approximately parallel to the channel (of the Upper and Lower Reference Lines: See chart for explanation).

Of more significance than the position of the child's weight curve in relation to the standard weight is the direction in which the weight curve is moving.

- If the child's weight curve should fall below the Lower Line (or not follow the curve of the channel), it should first be established that the child has no obvious symptoms of underlying illness. Once this has been excluded, efforts should be made to improve nutritional status through health education, provision of food supplements, etc. The child should be carefully monitored to ensure proper weight gain or whether referral to a physician may be needed.

* * *

A full-size sample of the Road to Health Chart is provided here to facilitate reproduction locally. The chart is fully described in "Paediatric Priorities in the Developing World" by David Morley (price: U.K. £ 1.25). Address requests for a free sample of the chart in English, Spanish or French and for Morley's book to:

Foundation for Teaching Aids at Low Cost (TALC)
30 Guilford Street
London WC1N 1EH
United Kingdom (England)

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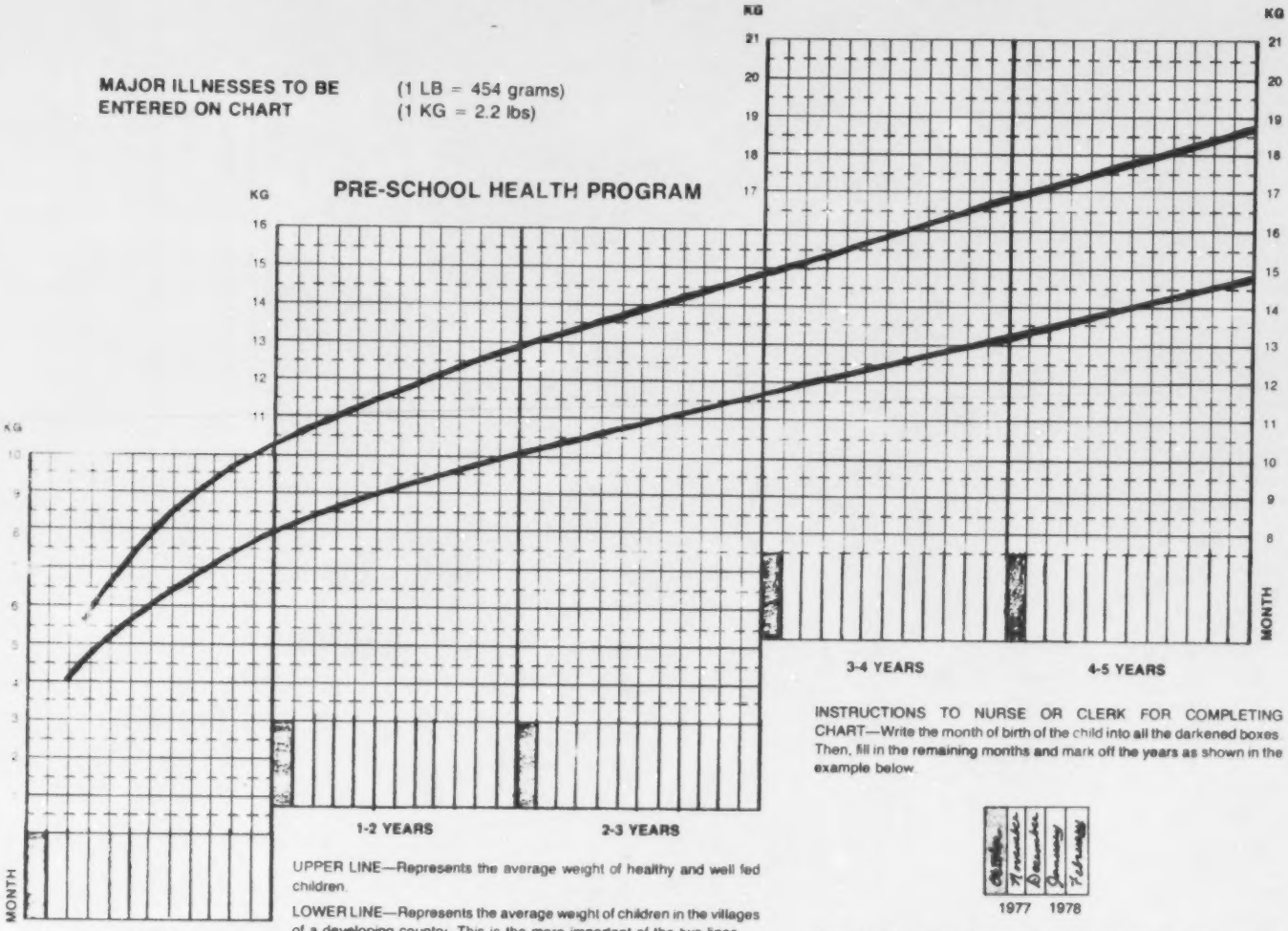
*American Public Health Association, "Salubritas", APHA, Washington, D.C., April 1977, p. 5.

CHILD'S HEALTH AND WEIGHT RECORD OVER FIRST FIVE YEARS

MAJOR ILLNESSES TO BE ENTERED ON CHART

(1 LB = 454 grams)
(1 KG = 2.2 lbs)

PRE-SCHOOL HEALTH PROGRAM



UPPER LINE—Represents the average weight of healthy and well fed children.

LOWER LINE—Represents the average weight of children in the villages of a developing country. This is the more important of the two lines.

A steady upward progress of the weight record is more important than its position.

INSTRUCTIONS TO NURSE OR CLERK FOR COMPLETING CHART—Write the month of birth of the child into all the darkened boxes. Then, fill in the remaining months and mark off the years as shown in the example below.

When the child comes for weighing make a large dot in that month's column against the weight. Connect this with the last dot.

NOTES

MALARIAL SUPPRESSION

Year

JAN	FEB	MAR	APR	MAY	JUNE
JULY	AUG	SEPT	OCT	NOV	DEC
JAN	FEB	MAR	APR	MAY	JUNE
JULY	AUG	SEPT	OCT	NOV	DEC
JAN	FEB	MAR	APR	MAY	JUNE
JULY	AUG	SEPT	OCT	NOV	DEC
JAN	FEB	MAR	APR	MAY	JUNE
JULY	AUG	SEPT	OCT	NOV	DEC
JAN	FEB	MAR	APR	MAY	JUNE
JULY	AUG	SEPT	OCT	NOV	DEC

SMALLPOX VACCINATION

DATE OF VACCINATION
(as soon after 3 months as possible)

DATE OF SCAR INSPECTION

DATE OF RE-VACCINATION
(between 4 and 5 years of age)

WHOOPING COUGH, TETANUS AND DIPHTHERIA INOCULATION)

DATE OF FIRST INJECTION
(at the age of one month or later)

DATE OF SECOND INJECTION
(one month after first injection)

DATE OF THIRD INJECTION

ANTI-TUBERCULOSIS VACCINATION (BCG)

DATE OF BCG VACCINATION
(BCG can be given immediately after birth)

DATE OF POST-BCG TUBERCULIN TEST
(or date of recognizing scar due to BCG vaccination)

1. POLIO

2. POLIO

3. POLIO

MEASLES VACC.

CENTRE OR CLINIC	CHILD'S No.
CHILD'S NAME	SEX
FATHER'S NAME	
MOTHER'S NAME	

DATE OF BIRTH	DATE FIRST SEEN
NAME OF VILLAGE OR LOCALITY	

BROTHERS AND SISTERS		
Year of Birth	Sex	Remarks

175

6. RADIO ANNOUNCEMENTS

Examples of Scripts:

1. Indonesia[1] — (By Commission on Responsible Parenthood of the Indonesian Council of Churches and Church World Service)

   Announcer: Rice planted too densely will not yield a good crop. Improper spacing between births will affect the health of the mother as well as the child.

   Ask for advice in (community) at the (*place*) between (*hours*),

2. Liberia[2] — (provided by the International Planned Parenthood Federation)

   Sound effects: Crying baby — children yelling

   Johnny: Mama, I'm home!

   Mother: Oh dear, is it twelve already: Here, feed the baby while I get lunch ready. And keep an eye on baby sister.

   Singing voice: Are you over-burdened with a load of care? Are your chores too many for you to bear? Space your many blessings. Care for them one by one. And it will surprise you how much you'll get done. Space your blessings. Care for them one by one. See how much you'll get done.

3. Pakistan[3] — (National Research Institute of Family Planning in Karachi)

   In a research project designed to study the impact of family planning broadcasts over Radio Pakistan, five spot announcements were transmitted each day for a month, each spot consisting of four elements:

   a. A 4-second musical introduction

   b. A dialogue between 2 adults (two male friends, two female friends, a couple, or a female and female physician)

1/ Levin, Harry L. and Robert W. Gillespie. *The Use of Radio in Family Planning.* World Neighbors, Oklahoma, p. 108.

2/ *Ibid,* p. 131.

3/ Karlin, Barry and Syed Mushtag Ali; "The Use of the Radio In Support of the Family Planning Programme in Hyderabad District of West Pakistan"; from *Pakistan Journal of Family Planning;* National Research Institute of Family Planning; Vol. 2, No. 2, July 1968, p. 63-67.

c. Questions about free family planning services; and

d. Announcements about where clinics would be held.

The dialogues were designed to appeal to listeners in terms of the health and well-being of children and the mother, and that practicing pregnancy spacing was a wise, common-place and safe practice. The following dialogue was used:

1st Woman: "Hello, Rashida. How is it you look so tired today?"

2nd Woman: "My three little children keep me so busy that I have no time to rest or even take care of them properly."

1st Woman: "Why don't you wait a few years before having another baby?"

2nd Woman: "But can that be done?"

1st Woman: "Sure, so many couples are planning their families nowadays."

APPENDIX D

SOURCES OF MATERIALS AND INFORMATION

Adult Education Association of the U.S.A. (810 18th St., N.W., Washington, D.C. 20006) Publishes leadership pamphlets on a variety of subjects in adult education.

African Medical and Research Foundation, (Wilson Airport, P. O. Box 30125, Nairobi, Kenya.) Booklets for auxiliaries.

American Foundation for Overseas Blind, Inc. (22 West 17th Street, New York, New York 10011, U.S.A.) *Material on blindness from lack of Vitamin A.*

American Home Economics Association. (2010 Massachusetts Avenue, N.W., Washington, D.C. 20036) Manuals for working with villagers and kits for family planning workers are available.

American National Red Cross. (17th bet D & E Streets, N.W., Washington, D. C. 20036) First Aid and nursing publications are published by Doubleday and Company, New York, U.S.A.

American Public Health Association (1015 — 18th Street, N.W., Washington, D.C. 20036)

a. *Control of Communicable Diseases in Man:* A handbook on all communicable diseases.

b. *Salubritas,* a bimonthly publication covering innovative practices used for the promotion of health in the developing world.

CARE. (660 1st Ave., New York, NY 10016) "Village Library" publications for new literates.

Caribbean Food and Nutrition Institute. (Kingston, Jamaica, West Indies.) Newsletter, "Cajanus," with excellent materials on nutrition.

Nigerian Ministry of Health. (Chief Education Officer, Public Health Department, Ministry of Health, Ibadan, Nigeria.) Posters and material in English and main Nigerian languages.

Christian Medical College and Hospital, Vellore 4, Madreas, India. Posters, flash cards, flannelgraphs in English and local languages.

Centre pour le Promotion de la Sante. (Kangu Majumbe, Republique du Zaire.) Excellent simple material for villages in French, some English, and local languages.

Centro Andino de Comunicaciones. (Casilla 2774 Cochabamba, Bolivia.) Flip charts in Spanish.

FAO, Food and Agricultural Organization of the United Nations. Many publications on nutrition and extension work. Catalogs availabe of publications and filmstrips. (See list of FAO addresses on page 183.)

Health Education Supply Centre. (P. O. Box 922, Loma Linda, California 92354, U.S.A.) Books and visual aids (hard and soft).

INCAP: Institute of Nutrition of Central American and Panama. An impressive list of excellent teaching materials in Spanish. Headquarters in Guatemala City, Guatemala.

International Planned Parenthood Association. (105 Madison Ave., New York, NY 10016) The principal non-governmental organization involved in family planning world wide. Headquartered in London.

Material Realise a l'Atelier de Material Didactique. (Busiga, B. P. 18, Ngozi, Burundi). Good flip charts; a teaching plan using flip charts in French local languages.

National Association for Public School Adult Education. A department of the National Education Association, Washington. Pamphlets and materials on adult education.

Nutrition Center of the Philippines. Communications Department, (Nichols Interchange, South Superhighway, Makati, Rizal, Philippines.) Leaflets and fact sheets in English.

Pan American Health Organization. Both a regional organization of WHO and of the OAS. Many worthwhile publications in health, particularly Latin American studies. 525 — 23rd Street, N.W., Washington, D.C. 20037.

Pan American Union. (19th & Constitution Ave., N.W., Washington, D.C. 20037) Many publications in adult literacy and basic education specific to Latin America. Publications for the new literate, "Biblioteca Popular Latinoamericana."

Planned Parenthood—World Population. (810 7th Ave., New York, NY 10019) Catalog of publications and film strips. Many materials in Spanish.

Proyecto Leer Bulletin. (Cumulative title lists—books for adults and children.) Sponsored by Books for the People Fund, Inc. and the Bro-Dart Foundation. Pan American Union, Washington, D.C.

RTAC: Regional Technical Assistance Center for AID. Located in Mexico. Catalog of Publications on a variety of subjects, in Spanish. (Through AID).

Teaching Aids at Low Cost (TALC). Institute of Child Health, 30 Guilford Street, London WCIN 1EH, England. Slide sets, weight charts, aids to weight charts (flannelgraphs, etc.). Free booklist, English, French, and Spanish.

UNESCO. (650 1st Ave., New York, NY 10016) United Nations. Many studies and publications in the field of adult education and literacy. Catalog of publications.

World Health Organization (WHO). United Nations. Numerous publications on many aspects of disease, nutrition and public health. Publications are generally technical, but still useful to the layman. Catalog of publications. (A list of addresses follows.)

U.S. AID. Produces a variety of useful books, pamphlets and films; examples are:

Village Technology Handbook. Available from U.S. AID Mission (at American Embassy in your country).

Simple tools to help village workers. Water supply, health sanitation, food processing and preservation, housing and construction, home improvement, communications tools such as bamboo pens.

The Multiplier Handbook. Available from U.S. AID Mission. A rather technical "how to" manual. French, Spanish and English editions; 1961 publications. The *puppet section* has been translated to Arabic, and printed by the Ministry of Education, Bagdad, Irag.

The Sunlight Filmstrip Projector. Available from U.S. AID Mission.

Very detailed, to scale directions for making a Sunlight Filmstrip Projector. Useful where no other projection can be used. 1962 publication.

Homemaking Around the World. Available from U.S. AID Mission.

A Guide to Simple, Basic Principles of Homemaking. Designed especially for overseas use. 1963 publication, 5th printing. Spanish edition by Regional Technical Aids Center (RTAC), Mexico City. Other U.S. AID Missions have translated editions in the language of the country.

Foods For Peace Around the World. Available from U.S. AID Mission.

Leaflets about food; school lunch booklet. Many have been translated to Spanish, Portugese, French.

The Multiplier. Available from U.S. AID Mission. Published bi-monthly. Gives information on new materials (publications films, etc.) and where to get copies.

W.H.O. locations:

AFGANISTAN: See India, W.H.O. Regional Office

CAMEROON: Librarie du Peuple Africain, Boite postale 1197, Yaounde

COLOMBIA: Pio Alfonso Garcia, Calle Canoe 21 A-11, Cartagena

CONGO: Librairie Congolaise, 12 av des Aviateurs, Leopoldville

COSTA RICA: Imprenta y Libreria Trejos S.A., Apartado 1313, San Jose

ECUADOR: Libreria Cientifica Bruno Mortiz, Luque 233, Guayaquil

FEDERATION OF MALAYA: Jubilee (Books) Store Ltd. 97 Batu Road, Kuala Lumpur

INDIA: W.H.O. Regional Office for South-East Asia, World Health House, Indraprastha Estate, Ring Road, New Delhi—1 — Oxford Book and Stationery Company, Scindia House, New Delhi; 17 Park Street, Calcutta 16 (Sub-Agent)

INDONESIA: W.H.O. Regional Office for South-East Asia, World Health House, Indraprastha Estate, Ring Road, New Delhi—1, India — Indira Ltd. 37 Dj. Dr. Sam Ratulangi, JARARTA (Sub-Agent)

IRAN: Mebso Bookstore: Naderi Avenue (Arbab-Guiv Building), REHERAN

LEBANON: Librairie Universelle, Beirut

MOROCCO: Centre de Diffusion Documentaire du B.E.P.I., 8, rue Michaux-Bellaire, RABAT

NEPAL: See India, W.H.O. Regional Office

NIGERIA: University Bookshop Nigeria, Ltd, University of Ibadan, IBADAN

PAKISTAN: Ferozons' Publishers, McLeod Road, Karachi; 365 Circular Road, Lahore; 35 The Mall, PESHAWAR — Mirza Book Agency, 6[illegible] The Mall, Lahore—3

PHILIPPINES: Alemar's, 769 Rizal Avenue, Manila

THAILAND: See India, W.H.O. Regional Office

TOGO: R. Walter and Cie, Place du Grand-Marche, Lome

TURKEY: Librairie Hachette, 469 av. de I'Independance, Istalbul

UNITED STATES OF AMERICA: Columbia University Press, International Documents Service, 2960 Broadway, New York, New York 10027

URUGUAY: Oficina de Representacion de Editoriales, Sr. Hector D'Elia, Plaza Cagancha 1342, Ier Piso, Montevideo

VENEZUELA: The University Society Venezolana C.A., Apartado 10786, Caracas

REGIONAL OFFICES — FOOD AND AGRICULTURE ORGANIZATION (FAO)

AFRICA

ACCRA
Postal Address:
Regional Office for Africa
P.O. Box 1628
Accra, Ghana

LATIN AMERICA

MEXICO CITY
Postal Address:
Regional Office for Latin America (Northern Zone)
(Oficina Regional de la FAO)
Apartado Postal 10778
Mexico 1, D.F. Mexico

RIO DE JANEIRO
Regional Office for Latin America (Eastern Zone)
(Escritorio Regional de FAO)
Rua Jardim Botanico, 1008
Rio de Janeiro

SANTIAGO

Postal Address:
Oficina Regional de la FAO
Casilla 10095
Santiago
Chile

Street Address:
Regional Office for Latin America (Western Zone)
(Oficina Regional de la FAO)
Cano y Aponte 995 (Providencia)
Santiago
Chile

ASIA AND THE FAR EAST

BANGKOK
Address:
Regional Office for Asia and Far East
Maliwan Mansion
Phra Atit Road
Bangkok, Thailand

NEW DELHI

Address:
Regional Office for Asia and Far East (Western Zone)
1, Ring Road
Kilokri
New Delhi 14, India

Peace Corps Program and
Training Journal Reprint Series
806 Connecticut Ave., N.W.
Washington, D.C. 20525

Health Education: A Study Unit on Fecal-Borne Diseases and Parasites (Philippines) provides instructors with materials for teaching students how an individual's habits affect and determine his or her health. Materials for oral presentation include an explanation of the process of digestion, the digestive system and fecal-borne diseases.

Combatting Hansen's Disease (Korea) is an illustrated presentation of technical information on physiology and immunology, epidemiological clinico-pathological and public health perspectives. Discussion of establishment and running of programs to combat Hansen's Disease (Leprosy) is included. Materials based on Korean experiences provide a useful basis for adaptations appropriate in other parts of the world.

Manual Didáctico: Huertos Escolares Y Nutrición was originally prepared for Guatemalan nutrition teachers in rural areas. It includes not only information on nutrition, but materials for planning and implementing agriculture programs related to nutrition classes.

Conseils de Santé à la Famille Africaine (Togo), an illustrated manual in simple French, provides material for teaching about pregnancy and childbirth, infant nutrition and basic health precautions, and recipes for infants' meals. (English translation will be available early in 1979.)

The State of the Art of Delivering Low Cost Health Service in Developing Countries: A Summary Study of 180 Health Projects: results of a worldwide 1976 study by the American Public Health Association.

Situation Actuelle Des Services De Santé A Faible Cout Dans Les Pays En Voie De Dévéloppement: Etude Sommaire De 180 Projets De Santé (French)

Situación Actual De La Prestación De Los Servicios De Salud De Bajo Costo En Los Países En Desarrollo: Estudio Resumido Con Respecto A 180 Proyectos De Salud (Spanish)

Other Sources of Information:

Adams, R.N. — *Cultural Surveys of Panama, Nicaragua, Guatemala, El Salvador, Honduras.* Pan American Sanitary Bureau (W.H.O.).

Health in Education. Washington, D.C.: Agency for International Development. August 1970

(Four case studies with a Philippines setting are offered for review: malaria eradication program, environmental sanitation program, school health program, and maternal child health.)

American National Red Cross. *Standard First Air and Personal Safety.* New York: Doubleday and Company, Inc., 1973.

American Public Health Association. *Control of Communicable Disease in Man.* A.P.H.A. 12th Edition. 1975. (paperback)

Batten, T. R. — *Communities and Their Development.* London, Oxford University Press. 1957. (6th revised edition, 1967, paperback)

Batten, T. R. — *The Non-Directive Approach in Group and Community Work.* London. Oxford University Press. 1967.

Derryberry, M. and Moore, A.R. — *Education and Training on the Health Aspects of Family P'anning.* M. Derryberry and Annie Ray Moore. W.H.O. August, 1970.

Djukanovic, V. ed. — *Alternative Approaches to Meeting Basic Health Needs in Developing Countries.* Geneva: UNICEF/W.H.O., 1975.

Fanamanu, Joe and Vaipulu, Tapou. "Working Through the Community Leaders." *International Journal of Health Education.* (July-September 1966).

FAO — *Guide to Extension Training.*

FAO — *Housing and Home Improvements in the Caribbean.* FAO and Caribbean Commission.

Gully, Esther — *Manual Practico para Parteras.* Mexico: Editorial Pax-Mexico, 1977.

Holmes, Alan C. — *Visual Aids in Nurrition Education.* FAO (1968).

Jelliffe, D.B. — *Child Health in the Tropics.* World Health Organization. 1966. Scientific Publication No. 133.

Jelliffe, Derrick B. — *Infant Nutrition in the Subtropics and Tropics.* World Health Organization. 1968. 2nd edition. W.H.O. Monograph No. 29.

Jelliffe, Derrick B. — *Child Nutrition in Developing Countries.* Washington, D.C. Superintendent of Documents, U.S. Government Printing Office. Public Health Service Publication No. 1822.

Jelliffe, D.B. — *Health Education of the Tropical Mother in Feeding Her Young Child.* D. B. Jelliffe. (Available at the time of writing from Peace Corps, Washington, D.C.)

King, Maurice (ed.) — *Medical Care in Developing Countries.* Nairobi. Oxford University Press. 1966. (paperback)

Mager, R. F. — *Preparing Instructional Objectives.* Palo Alto, California. Fearon Publishers, Inc. 1962.

PAHO — *1970, Maternal Nutrition and Family Planning in the Americas,* Washington, D.C.

Paul, B. (ed.). — *Health, Culture and Community.* New York. Russell Sage Foundation. 1955. (paperback)

Read, Margaret — *Culture, Health and Disease.* Social and Cultural Influences on Health Programmes in Developing Countries. Philadelphia. J. B. Lippencott Co. 1966.

Ritchie, Jean A. — *Learning Better Nutrition: A Second Study of Approaches Techniques.* FAO Nutritional Studies, No. 20. FAO. 1967

Simons, Jeannette, D.Sc., ed. — *Making Health Education Work.* Washington, D.C.: American Public Health Association, 1976.

Turner, Clair E. — *Community Health Educator's Compendium of Knowledge.* Switzerland: International Journal of Health Education, 1964.

UNESCO — *Planning for Health Education in Schools.* C. E. Turner. UNESCO Source Book. Longmans, Green and Co., Ltd. and UNESCO—W.H.O., 1966.

Vaughn, Gerard — *A Pictorial Guide to Common Childhood Illnesses.* Colonnade, Bradford, England. Arcade Publishers, Ltd. 1970.

Werner, David — *Where There Is No Doctor — A Village Health Care Handbook.* Hesparian Foundation (P. O. Box 1692, Palo Alto, California 94302 U.S.A.), 1977. (English & Spanish)

W.H.O. — *Expert Committee on Planning and Evaluation of Health Education.* W.H.O. Technical Report Series: 409. W.H.O. 1969.

W.H.O. — *Training and Utilization of Village Health Workers.* Geneva: World Health Organization Working Group, 1974.

W.H.O. — *Health Education: A Programme Review.* Geneva: World Health Organization, 1974

W.H.O. — *Freedom from Hunger Campaign.* Basic Studies Series. "Malnutrition and Disease." "Conquest of Deficiency Diseases." Geneva.

Yang, Hsin—Pao — *Fact-Finding with Rural People.* Hsin-Pao Yang. FAO. 1955. 5th printing, 1966.

APPENDIX E

VOCABULARY

Many of the terms used in this handbook will also be found in the following list. The definitions were adapted from *Where There Is No Doctor — A Village Health Care Handbook* with the kind permission of David Werner (Hesparian Foundation, P.O. Box 1692, Palo Alto, California 94302 U.S.A.)

A

ABDOMEN — The part of the body that contains the stomach, liver, and guts. The belly.

ABNORMAL — Different from what is usual, natural, or average. Not normal.

ABSCESS — A sac of pus caused by bacterial or other infection. For example, a boil.

ACUTE — Sudden and short-lived. An acute illness is one that starts suddenly and lasts a short time. The opposite of 'chronic'.

ADOLESCENT — The years in which a child becomes an adult. The teens: 13 to 19 years old.

AFTERBIRTH — See PLACENTA.

ALCOHOLISM — A continual need a person cannot control to overuse alcoholic drinks such as beer, rum, wine, etc.

ALLERGY, ALLERGIC REACTION — A problem such as an itching rash, hives, sneezing, and sometimes difficult breathing or shock that affects certain people when specific things are breathed in, eaten, injected, or touched.

AMEBAS (also AMOEBAS) — Tiny animals that live in water or in the gut and can only be seen with a microscope. They can cause diarrhea, dysentery, and liver abscess.

ANALGESIC — Medicine to calm pain.

ANEMIA — A disease in which the blood gets thin for lack of red blood cells. Signs include tiredness, pale skin, and lack of energy. See also PERNICIOUS ANEMIA.

ANTACID — Medicine used to control too much stomach acid and to calm stomach upset.

ANTIBIOTIC — Medicine that fights infections caused by bacteria.

ANTISEPTIC — A soap or cleaning liquid that prevents growth of bacteria.

ANTIVENIN (ANTI-VENOM) — An antitoxin used to treat poisoning from a venom, such as snake poison.

AORTA — The main artery or vessel that carries blood out of the heart to the body.

APOPLEXY — An old word for stroke. See STROKE.

APPENDIX — A finger-like sac attached to the large intestine (gut).

APPROPRIATE — Something that is easiest, safest, and most likely to work in a particular situation or condition.

ARTERY — A vessel carrying blood from the heart through the body. Arteries have a pulse. Veins, which return blood to the heart, have no pulse.

ASCARIS (ROUNDWORM) — Large worms that live in people's intestines and cause discomfort, indigestion, weakness, and sometimes gut obstruction (blocking of the gut).

B

BACTERIA — Tiny germs that can only be seen with a microscope and that cause many different infectious diseases.

BAG OF WATERS — The sac inside the womb that holds the baby; amniotic sac. When it breaks, releasing its fluid, this usually means that labor has begun.

BEDSORES — Chronic open sores that appear in people who are so ill they do not roll over or change position in bed.

BIRTH DEFECTS — See DEFECTS.

BLADDER STONES — See KIDNEY STONES

BLOOD PRESSURE — The force or pressure of the blood upon the walls of the blood vessels (arteries and veins); it varies with the age and health of the person.

BOIL — A swollen, inflamed lump with a pocket of pus under the skin. A kind of abscess.

BOOSTER — A repeat vaccination to renew the effect of an earlier series of vaccinations.

BOWEL MOVEMENT — To have a bowel movement is to defecate; the way of passing solid waste out of the body. See FECES.

BREAST ABSCESS — See MASTITIS.

BREECH DELIVERY — A birth in which the baby comes out buttocks or legs first.

BROAD–SPECTRUM ANTIBIOTIC — A medicine that works against many kinds of micro-organisms. Compare with a narrow-spectrum antibiotic, which works against only a few.

BRONCHI — The tubes leading to the lungs, through which air passes when a person breathes.

BRONCHITIS — An infection of the bronchi.

BUBO — A very swollen lymph node. BUBOS is a common name for lymph-ogranuloma venereum.

C

CANCER — A tumor or lump that grows and may keep growing until it finally causes death.

CARBOHYDRATES — Starches and sugars. Foods that provide energy.

CAST — A stiff bandage of gauze and plaster that holds a broken bone in place until it heals.

CATARACT — An eye problem in which the lens of the eye becomes cloudy, making it more and more difficult for the person to see. The pupil looks gray or white when you shine a light into it.

CAVITY — A hole or spot of decay in a tooth where bacteria have got in and destroyed part of the tooth.

CENTIGRADE (C.) — A measure or scale of heat and cold. A healthy person's temperature (normal temperature) is 37°C. Water freezes at 0°C. and boils at 100°C.

CEREBRO–VASCULAR ACCIDENT, CVA — See STROKE.

CERVIX — The opening or neck of the womb at the back of the vagina.

CHANCRE — A painless sore or ulcer on the genitals, finger, or lip that is one of the first signs of syphilis.

CHIGGER — A tiny, crawling spider or tick-like animal that buries its head under the skin and sucks blood.

CHILDBIRTH FEVER — (This is also called childbed fever, postpartum infection, or puerperal infection.) The fever and infection that mothers sometimes develop after childbirth.

CHRONIC — Long-term or frequently recurring (compare with acute). A chronic disease is one that lasts a long time.

CIRCULATION — The flow of blood through the arteries and veins by the pumping of the heart.

CLEFT — Divided, separated. A child born with a cleft palate has a separation or abnormal opening in the roof of his mouth.

CLIMACTERIC — Menopause.

COLIC — Sharp abdominal pains caused by spasms or cramps in the gut.

COLOSTRUM — The first milk a mother's breasts produce. It looks watery but is rich in protein and helps protect the baby against infection.

COMA — A state of unconsciousness from which a person cannot be wakened. It is caused by disease, injury or poison, and often ends in death.

COMMUNITY — A group of people living in the same village or area who have similar living conditions, interests and problems.

COMPLICATIONS — Secondary health problems that sometimes develop in the course of a disease. For example, meningitis may result as a dangerous complication of measles.

COMPOST — A mixture of plant and animal waste that is allowed to rot for use as a fertilizer. Hay, dead leaves, vegetable waste, animal droppings, and manure all make good compost.

COMPRESS — A folded cloth or pad put on a part of the body. It may be soaked in hot or cold water.

CONJUNCTIVA — A thin, protective layer that covers the white of the eye and inner side of the eyelids.

CONSCIOUSNESS — See LOSS OF CONSCIOUSNESS.

CONSTIPATION — Dry, hard, difficult stools (bowel movements) that do not come often.

CONSUMPTION — An old name for tuberculosis.

CONTACT — Touch. Contagious diseases can be spread by a sick person coming in contact with (touching or being close to) another person.

CONTAGIOUS DISEASE — A sickness that can be spread easily from one person to another.

CONTAMINATE — To dirty, stain or infect by contact. A syringe that has not been boiled is often contaminated and can cause infections, even though it looks clean.

CONTRACEPTIVE — Any method of preventing pregnancy.

CONTRACTIONS — Tightening or shortening of muscles. The strong contractions of the womb when a woman is in labor help to push the baby out of the womb.

CONTRAINDICATION — A situation or condition when a particular medicine should not be taken. (Many medicines are contraindicated in pregnancy.)

CONVULSIONS — An uncontrolled fit. A sudden jerking of part or all of the person's body, as in meningitis or epilepsy.

CORNEA — The clear outer layer of 'window' of the eye, covering the iris and pupil.

CORNS — Hard, thick, painful parts of the skin formed where sandals or shoes push against the skin or one toes presses against another.

CRAMP — A painful tightening or contraction of a muscle.

CRETINISM — A condition in which a child is born mentally slow and often deaf. It is usually due to lack of iodine in the mother's diet.

CUPPING — A home remedy that consists of drawing blood to the surface of the body by use of a glass or cup with a flame under it.

CYST — An abnormal, sac-like, liquid-filled growth developing in the body.

D

DANDRUFF — Oily white or grayish flakes or scales that appear in the hair. Seborrhea of the scalp.

DECONGESTANT — A medicine that helps relieve swelling or stuffiness of the nose or sinuses.

DEFECTS — Birth defects are physical or mental problems a child is born with, such as a hare lip, club foot, or an extra finger or toe.

DEFICIENCY — Not having enough of something; a lack.

DEFORMED — Abnormally formed, not having the right shape.

DEHYDRATION — A condition in which the body loses more liquid than it takes in. This lack of water is especially dangerous in babies.

DELIRIUM — A state of mental confusion with strange movements and speech; it may come with high fever or severe illness.

DERMAL — Of the skin.

DERMATITIS — An infection or irriation of the skin.

DIAPER RASH — Reddish, irritated patches between a baby's legs caused by urine in his diapers (nappy) or bedding.

DIARRHEA — Frequent runny or liquid stools.

DIET — The kinds and amounts of foods that a person should eat or avoid eating.

DISCHARGE — A release or flowing out of fluid, mucus or pus.

DISLOCATIONS — Bones that have slipped out of place at a joint.

DROWNING — When a person stops breathing (suffocates) from being under water.

DYSENTERY — Diarrhea with mucus and blood. It is usually caused by an infection.

E

ECLAMPSIA — Sudden fits, especially during pregnancy or childbirth. The result of toxemia of pregnancy.

EMBRYO — The beginnings of an unborn baby when it still very small.

EMERGENCY — A sudden sickness or injury that calls for immediate attention.

EMETIC — A medicine or drink that makes people vomit. Used when poisons have been swallowed.

ENEMA — A solution of water put up the anus to cause a bowel movement.

EPIDEMIC — An outbreak of disease affecting many persons in a community or region at the same time.

EVALUATION — A study to find out the worth or value of something, or how much has been accomplished. Often done by comparing different factors or conditions before and after a project or activity is underway.

EVIL EYE — A glance or look from someone believed to have the power to bewitch or do harm to people.

EXHAUSTION — Extreme fatigue and tiredness.

EXPECTORANT — A medicine that helps a person cough up mucus from the respiratory tract (lungs, bronchi, etc.); a cough-helper.

EXPIRATION DATE — The month and year marked on a medicine that tells when it will no longer be good. Throw away most medicines after this date.

F

FAHRENHEIT (F.) — A measure or scale of heat and cold. A healthy person's temperature (normal temperature) is 98.6°F. Water freezes at 32°F. and boils at 212°F.

FAMILY PLANNING — Using birth control methods to plan when to have and not have children.

FECES — Stools; the waste from the body that is moved out through the bowels in a 'bowel movement'.

FECES–TO–MOUTH — Spread or transmitted from the stools of one person to his or another person's mouth, usually by food or drink, or on fingers.

FETOSCOPE — An instrument or tool for listening to sounds made by the unborn baby (fetus) inside the womb.

FETUS (FOETUS) — The developing baby inside the womb.

FEVER — A body temperature higher than normal.

FIRST AID — Emergency care or treatment for someone who is sick or injured.

FIT — A sudden, violent attack of a disease, causing convulsions or spasms (jerking of the body that the person cannot control), and sometimes unconsciousness.

FLU — A bad cold, often with fever, pain in the joints, and sometimes diarrhea.

FLUKES — Worms that infect the liver or other parts of the body and cause different diseases. Blood flukes get into the blood and cause schistosomiasis.

FOETUS — See FETUS

FOLIC ACID — A nutritions substance found in leafy green vegetables.

FOLLICLES – Small lumps.

FONTANEL – The 'soft spot' on the top of a young baby's head.

FRACTURE – A broken bone.

G

GALLBLADDER – A small, muscular sac attached to the liver. The gallbladder collects bile, a liquid that helps digest fatty foods.

GAUZE – A soft, loosely woven kind of cloth used for bandages.

GENERIC NAME – The scientific name of a medicine, as distinct from the brand names given it by different companies that make it.

GENITALS – The organs of the reproductive system, especially the sex organs.

GERMS – Very small organisms that can grow in the body and cause some infectious diseases; micro-organisms.

GIARDIA – A tiny, microscopic parasite that can infect the intestines, causing frothy yellow diarrhea.

GLUCOSE – A simple form of sugar that the body can use quickly and easily. It is found in fruits and honey, and can be brought as a white powder for use in Rehydration Drinks.

GOITER – A swelling on the lower front of the neck (enlargement of the thyroid gland) caused by lack of iodine in the diet.

GRAIN (GR.) – A unit of weight based on the weight of a grain of wheat. 1 grain weighs 65 mg.

GRAM (GM.) – A metric unit of weight. There are about 28 grams in an ounce. There are 1000 gm. in 1 kilogram.

GROIN – The front part of the body where the legs join. The genital area.

GUT – Intestines.

H

HARE LIP – A split in the upper lip, going from the mouth up to the nost (like a hare, or rabbit). Some babies are born with a hare lip.

HEALTH WORKER – A person who takes part in making his community a healthier place to live.

HEMORRHAGE — Severe or dangerous bleeding.

HEREDITARY — Passed on from parent to child.

HISTORY (MEDICAL HISTORY) — What you can learn through asking questions about a person's sickness—how it began, when it gets better or worse, what seems to help, whether others in the family or village have it, etc.

HIVES — Hard, thick, raised spots on the skin that itch severely. They may come and go all at once or move from one place to another. A form of allergic reaction.

HORMONES — Chemicals made in parts of the body to do a special job. For example, estrogen and progesterone are hormones that regulate a woman's period and chance of pregnancy.

HYGIENE — Actions or practices of personal cleanliness that lead to good health.

HYPERTENSION — High blood pressure.

HYPERVENTILATION — Very rapid, deep breathing in a person who is frightened.

HYSTERIA — (1) In common language, a condition of great nervousness, fear and emotional distress. (2) In medical terms, signs of sickness caused by fear or the power of belief.

I

IMMUNIZATIONS (VACCINATIONS) — Medicines that give protection against specific diseases for example: diphtheria, whooping cough, tetanus, polio, tuberculosis, measles and smallpox.

INFECTION — A sickness caused by bacteria or other germs. Infections may affect part of the body only (such as an infected finger) or all of it (such as measles).

INFECTIOUS DISEASE — A disease that is easily spread or communicated (passed from one person to another); contagious.

INFLAMMATION — An area that is red, hot and painful, often because of infection.

INSECTICIDE — A poison that kills insects. DDT and lindane are insecticides.

INTESTINAL PARASITES — Worms and tiny animals that get in people's intestines and cause diseases.

INTESTINES — The guts or tube-like part of the food canal that carries food and finally waste from the stomach to the anus.

INTRAMUSCULAR (IM) INJECTION — An injection put into a muscle, usually of the arm or the buttock—different from an intravenous (IV) injection, put directly into a vein.

IRIS — The colored or dark part of the eye around the pupil.

J

JAUNDICE — A yellow color of the eyes and skin. It is a sign of disease in the liver, gallbladder, pancreas or blood.

K

KERATOMALACIA — A dullness and softening of the eye, ending in blindness. It is caused by a lack of Vitamin A.

KIDNEYS — Large, bean-shaped organs in the lower back that filter waste from the blood, forming urine.

KIDNEY STONES — Small stones that form in the kidneys and pass down to the urinary tube. They can cause a sharp pain the lower back, side, urinary tube, or lower belly. In the bladder they may block the urinary tube and make urination painful or impossible.

KILOGRAM (KG.) — One thousand grams. A 'kilo' is equal to a little over 2 pounds.

KWASHIORKOR (WET MALNUTRITION) — Severe malnutrition caused by not eating enough protein. A child with kwashiorkor has swollen feet, hands, and face and peeling sores.

L

LABOR — The sudden tightening or contractions of the womb that mean the baby will soon be born.

LARVA (LARVAE) — The young worm-like form that comes from the egg of many insects or parasites. It changes form when it becomes an adult.

LATRINE — An outhouse; privy; a hole or pit in the ground to use as a toilet.

LAXATIVE — A medicine used for constipation that makes stools softer and more frequent.

LIGAMENTS — Tough cords in a person's joints that help hold them in place.

LINGUAL — Of or relating to the tongue.

LITER (L.) — A metric measure equal to about one quart. A liter of water weighs one kilogram.

LIVER — A large organ under the lower right ribs that helps clean the blood and get rid of poisons.

LOSS OF CONSCIOUSNESS — The condition of a sick or injured person who seems to be asleep and cannot be wakened. Unconsciousness.

LUBRICANT — An oil or cream used to make surfaces slippery.

LYMPH NODES — Small lumps under the skin in different parts of the body that are traps for germs. They become painful and swollen when they get infected. In tuberculosis and cancer they are often swollen but not painful.

M

MALNUTRITION — Health problems caused by not eating enough of the foods that the body needs.

MARASMUS (DRY MALNUTRITION) — A condition caused by not eating enough. Starvation. The person is very thin and underweight, often with a pot belly.

MASK OF PREGNANCY — Dark, olive-colored areas on face, breasts, or middle of the belly that are normal in a pregnant woman.

MASTITIS (BREAST ABSCESS) — An infection of the breast, usually in the first weeks or months of nursing a baby. It causes part of the breast to become hot, red and swollen.

MEMBRANE — A thin, soft sheet or layer that lines or protects some part of an animal or plant.

MENOPAUSE (CLIMACTERIC) — The time when a woman naturally stops having monthly bleeding, usually between the ages of 40 and 50.

MENSTRUAL PERIOD, MENSTRUATION — Monthly bleeding in women.

MENTAL — Of or relating to the mind (thinking, brain).

MICRO–ORGANISM — A tiny plant or animal so small it can only be seen with the aid of a microscope.

MICROSCOPE — An instrument with lenses that make very tiny objects look larger.

MICROSCOPIC — Something so small that it can only be seen with a microscope.

MIGRAINE — A severe, throbbing headache, sometimes on one side of the head only. It often causes vomiting.

MILLIGRAM (MG.) — One thousandth of a gram.

MILLILTER (ML.) — One thousandth of a liter.

MINERALS — Simple metals or other things the body needs, such as iron, calcium, and iodine.

MISCARRIAGE (SPONTANEOUS ABORTION) — The death of the developing baby or fetus in the womb. Sometimes followed by heavy bleeding with blood clots.

MONGOLISM (DOWN'S SYNDROME) — A disease in which a child is born mentally slow with slanted eyes, a round dull face and wide hands with short fingers.

MORNING SICKNESS — Nausea and vomiting that occur especially in the morning in the early months of pregnancy.

MOUTH–TO–MOUTH BREATHING — Artificial respiration. A method of helping a person who has stopped breathing to start breathing again.

MUCUS — A thick, slippery liquid that moistens and protects the linings of the nose, throat, stomach, guts and vagina.

N

NARROW–SPECTRUM ANTIBIOTIC -- A medicine that works against a limited number of different kinds of bacteria.

NASAL — Of or relating to the nose.

NAUSEA — Stomach distress or upset; feeling like you need to vomit.

NAVEL — Belly button; umbilicus; the place in the middle of the belly where the umbilical cord was attached.

NERVES — Thin threads or strings that run from the brain to every part of the body and carry messages for feeling and movement.

NON–INFECTIOUS DISEASE — A disease that does not spread from person to person.

NORMAL — Usual, natural or average. Something that is normal has nothing wrong with it.

NUTRITIOUS — Nourishing. Nutritious foods are those that have the things the body needs to grow, be healthy, and fight off disease.

O

OBSTRUCTION — A condition of being blocked or clogged. An obstructed gut is a medical emergency.

OINTMENT — A salve or lotion to use on the skin.

OPHTHALMIC — Of the eyes.

ORAL — By mouth. An oral medicine is one taken by mouth.

ORGAN — A part of the body that is more or less complete in itself and does a specific job. For example, the lungs are organs for breathing.

ORGANISMS — Living things (animals or plants).

OTIC — Having to do with the ears.

OUNCE — A measure of weight equal to about 28 grams. There are 16 ounces in one pound.

OVARIES — Small sacs in a woman's belly next to her womb. They produce the eggs that join with a man's sperm to make a baby.

OXYTOCICS — Dangerous medicine that cause the womb and blood vessels in it to contract. They should only be used to control a mother's heavy bleeding after her child is born.

P

PALATE — The roof or top part of the mouth.

PANCREAS — An organ below the stomach, on the left side, that produces insulin.

PANNUS — Tiny blood vessels that appear in the top edge of the cornea in certain eye diseases like trachoma.

PARALYSIS — Loss of the ability to move part or all of the body.

PARASITES — Worms and tiny animals that live in or on another animal or person and cause harm. Fleas, intestinal works and amebas are parasites.

PARENTERAL — Not by mouth but by injection.

PASTEURIZATION — The process of heating milk or other liquids to a certain temperature (60°C.) for about 30 minutes in order to kill harmful bacteria.

PELVIS — Hip bones.

PERITONEUM — The thin lining between the guts and body wall. The bag that holds the guts.

PERITONITIS — A very dangerous inflammation of the peritoneum. The belly gets hard like a board, and the person is in great pain, especially when he tries to lie with his legs straight.

PERNICIOUS ANEMIA — A rare kind of anemia caused by a lack of vitamin B^{12}. Pernicious means harmful.

PETROLEUM JELLY (PETROLATUM, VASELINE) — A grease-like jelly used in preparing skin ointments.

PHLEGM — Mucus with pus that forms in abnormal amounts in the lungs and must be coughed out.

PILES (HEMORRHOIDS) — Small, painful bumps or lumps at the edge of the anus or inside. These are actually swollen or varicose veins.

PLACENTA (AFTERBIRTH) — The dark and spongy lining inside the womb where the fetus joins the mother's body. The placenta normally comes out 15 minutes to half an hour after the baby is born.

PLACENTA PREVIA — A condition in which the placenta is too low in the womb and blocks the mouth of the womb. The risk of dangerous bleeding is high. Women who have bleeding late in pregnancy—a possible sign of placenta previa—should go to a hospital at once.

PLANTAIN — A kind of banana with a lot of starch and fiber. It is often cooked and eaten when green.

POLLEN — The fine dust made in the flower of a seed plant. People who are ALLERGIC to pollen often have hay fever at times of the year when plants put a lot of this dust into the air.

POSTPARTUM — After childbirth.

POSTPARTUM HEMORRHAGING — Heavy bleeding of the mother following childbirth.

PRECAUTION — Care taken in advance to prevent harm or prepare for emergencies before they happen.

PREGNANCY — The period (normally 9 months) when a woman carries a child inside her.

PREMATURE BABY — A baby born before the full 9 months of pregnancy and weighing less than 2 kilos.

PRESENTATION OF AN ARM — An abnormal position of delivery in which the baby's hand comes out first during the birth. This is an emergency needing a doctor.

PREVENTION — Action taken to stop sickness before it starts.

PROLAPSE — The slipping or falling down of a part of the body from its normal position; for example, a prolapsed rectum or womb.

PROTECTIVE FOODS — Foods that are rich in vitamins and minerals. They help build healthy bodies and make people more able to resist or fight diseases.

PROTEINS — Body-building foods necessary for proper growth and strength.

PULSE — The number of times a person's heart beats in one minute.

PUPIL — The round opening or black center in the iris of the eye. It gets smaller in bright light and larger in the dark.

PURGE — A very strong laxative that causes diarrhea.

R

RATE — The number of times something happens in a given amount of time.

RECTUM — The end of the large intestine close to the anus.

REFLEX — An automatic reaction or movement that happens without a person's trying to do it.

REHYDRATION DRINK — A drink to correct dehydration, which you can make with boiled water, sugar, salt and bicarbonate of soda.

RESISTANCE — The ability of something to defend itself against something that would normally harm or kill it. Many bacteria become resistant to the effects of certain antibiotics.

RESOURCE — What is needed or available for doing or making something. People, land, animals, money, skills and plants are resources that can be used for improving health.

RESPIRATION — Breathing. The RESPIRATORY SYSTEM includes the bronchi, lungs and other organs used in breathing.

RESPIRATION RATE — The number of times a person breathes in one minute.

RETARDATION — Abnormal slowness of thought, action, or mental and emotional growth.

RHINITIS — An inflammation of the lining of the nose, often caused by allergies. Hay fever.

RISK — The possibility of injury, loss, or harm. Danger.

ROAD TO HEALTH CHART — A monthly record of a child's weight that shows whether the child is gaining weight normally.

ROTATION OF CROPS — To grow different crops one after the other in the same field, so that the soil becomes richer rather than weaker from year to year.

RUPTURE (HERNIA) — An opening or tear in the muscles covering the belly that allows a loop of the gut to push through and form a ball or lump under the skin.

S

SANITATION — Public cleanliness involving community efforts in disease prevention, promoting hygiene, and keeping public places free of waste.

SEPTICEMIA — An infection of the blood-sometimes called 'blood poisoning'.

SHOCK — A dangerous condition with severe weakness or unconsciousness, cold sweat and fast, weak pulse. It is caused by dehydration, hemorrhage, injury, burns or a severe illness.

SIDE EFFECTS — Problems caused by using a medicine.

SIGNS — The things or conditions one looks for when examining a sick person, to find out what sickness he has. In this book symptoms, or the problems a person feels, are included with signs.

SINUS TROUBLE (SINUSITIS) — Sinuses are hallows in the bone that open into the nose. Sinusitis is inflammation causing pain above and below the eyes.

SOFT DRINKS — Fizzy, carbonated drinks like Coca-Cola.

SOFT SPOT — See FONTANEL.

SPASM — A sudden muscle contraction that a person cannot control. Spasms of the gut produce cramps, or colic. Spasms of the bronchi occur in asthma. Spasms of the jaw and other muscles occur in tetanus.

SPASTIC — Having chronic abnormal muscle contraction due to brain damage. The legs of spastic children often cross like scissors.

SPLEEN — An organ normally the size of a fist under the lower edge of the ribs on the left side. Its job is to help make and filter the blood.

SPONTANEOUS ABORTION — See MISCARRIAGE.

SPRAIN (STRAIN) — Bruising, stretching, or tearing of ligaments or tendons in a twisted joint. A sprain is worse than a strain.

SPUTUM — Mucus and pus (phlegm) coughed up from the lungs and bronchi of a sick person.

STARCHES — Energy foods like maize, rice, wheat, cassava, potatoes and squash.

STERILE — (1) Completely clean and free from living micro-organisms. Things are usually sterilized by boiling or heating. (2) Sterile also means permanently unable to have children.

STERILIZATION — (1) To sterilize instruments, bottles and other things by boiling or heating in an oven. (2) Also, a permanent way of making a man or woman unable to reproduce (have children).

STETHOSCOPE — An instrument used to listen to sounds in the body, such as the heartbeat.

STOMACH — The sac-like organ in the belly where food is digested. In common language 'stomach' is often used to mean the whole belly or abdomen.

STOOLS — See FECES.

STROKE (APOPLEXY, CEREBRO—VASULAR ACCIDENT) — A sudden loss of consciousness, feeling, or ability to move, caused by bleeding or a clot inside the brain.

STY — A red, swollen lump on the eyelid, usually near the edge, caused by infection.

SUCROSE — The common sugar that comes from sugarcane or sugar beets. It is more complex and more difficult for the body to use than glucose.

SUGARS — Sweet foods like honey, sugar or fruit that give energy.

SUSPENSION — A powder mixed in a liquid.

SUTURE — A stitch made with needle and thread to sew up an opening or wound.

SYMPTOMS — The feelings or conditions a person reports about his sickness. In this book symptoms are included with signs.

T

TABLESPOON — A measuring spoon that holds 3 teaspoons or 15 ml.

TABOO — Something that is avoided, banned or not allowed because of a cultural belief.

TEASPOON — A measuring spoon that holds 5 ml. Three teaspoons equal 1 tablespoon.

TEMPERATURE — The degree of heat of a person's body.

TENDONS — Tough cords that join muscles to bones (distinct from ligaments, which join bones with bones at joints).

THALASSEMIA — A form of hereditary anemia seen only in certain countries. A child may become very anemic by age 2, with a large liver and spleen.

THERMOMETER — An instrument used to measure how hot a person's body temperature is.

TICK — A crawling insect-like animal that buries its head under the skin and sucks blood.

TOPICAL — For the skin. A topical medicine is to be put on the skin.

TOXEMIA — A sickness resulting from certain poisons in the body; for example, toxemia of pregnancy and urine toxemia (or uremia).

TOXIC — Poisonous.

TRACT — A system of body organs and parts that work together to do a special job; for example, the urinary tract cleans the blood and gets rid of urine.

TRADITIONS — Practices, beliefs or customs handed down from one generation to another by example or word of mouth.

TRANSMIT — To pass on, transfer or allow to spread from one person to another.

TROPICAL — Having to do with the tropics or hot regions of the world.

TUMOR — An abnormal mass of tissue without inflammation. Some tumors are due to cancer.

U

ULCER — A break in the skin or mucus membrane; a chronic open sore of the skin, the surface of the eye, the stomach or gut.

UMBILICAL CORD — The cord that connects a baby from its navel to the placenta on the inside of its mother's womb.

UMBILICAL HERNIA — A large, outward bulge of the navel-caused by a loop of intestine that has pushed through the sac holding the guts.

UMBILICUS — See NAVEL.

UNCONSCIOUSNESS — See LOSS OF CONSCIOUSNESS.

UNDER–FIVES PROGRAM — A plan that helps mothers learn about their children's health needs, make regular visits to a clinic for checkups, and keep a record (Road to Health Chart) of the growth of their children under five years old.

URETHRA — Urinary tube or canal. The tube that runs from the bladder to the hole a person urinates from.

URINARY TRACT — The system of organs concerned with the formation and getting rid of urine-such as kidneys, bladder and urinary tube (urethra).

URINE — Liquid waste from the body.

UTERUS — Womb

V

VACCINATIONS — See IMMUNIZATIONS.

VAGINA — The tube or canal that goes from the opening of a woman's sex organs to the entrance of her womb.

VAGINAL — Of or relating to the vagina.

VARICOSE VEINS — Abnormally swollen veins, often lumpy and winding, usually on the legs of older people, pregnant women and women who have had a lot of children.

VASELINE — See PETROLEUM JELLY.

VENEREAL DISEASE — A disease spread by sexual contact.

VESSELS — Tubes. Blood vessels are the veins and arteries that carry the blood through the body.

VIRUS — Germs smaller than bacteria, which cause some infectious (easily spread) diseases.

VITAMINS — Protective foods that our bodies need to work properly.

VOMITING — Throwing up the contents out of the stomach through the mouth.

W

WELTS — Lumps or ridges raised on the body, usually caused by a blow or an allergy (hives).

WOMB — The sac inside a woman's belly where a baby is made. The uterus.

X

XEROSIS or XEROPHTHALMIA — Abnormal dryness of the eye due to lack of Vitamin A.

APPENDIX F

HEALTH EDUCATION AND IMMUNIZATION CAMPAIGNS

The following information represents the *preliminary thinking* of public health experts at the World Health Organization. For more up-to-date guidelines, speak to your local public health officials.

1. At the central level, seek backing from leaders of central governments within the many related ministries and division. This support is essential for insuring public knowledge and cooperation, securing and maintaining support from field workers, proper supervision, evaluation and logistical backstopping.

   Seek to obtain support of key individuals such as political leaders, medical educators, leaders in the private and voluntary sections, teachers, religious leaders and those in the mass media field.

2. Foster interest and support of health services personnel through quality training, particularly in reference to educational needs of the public. This can be accomplished by your help in developing curricula, appropriate training methods such as discussion and role playing techniques, through effective field training programs, using staff meetings for in-service training, preparation of bulletins or information sheets, getting feedback from the field, and insuring that efforts are made to secure widespread local support at the provincial, district and sub-district levels. This can best be accomplished through early planning together with local officials who are involved in community education and health administration. Printed materials, audio-visuals and the radio can all be helpful to this educational effort.

3. Assist your community leaders in preparing for vaccination campaigns before vaccination teams arrive, while they are working in the communities and after their departure. Table 1 which follows provides a few examples of educational considerations.

4. Related activities can include arranging for dates and locations for immunization sessions, insuring specific support of local leaders and groups, obtaining full community participation, including keeping local registers of children needing immunizations, helping at the sessions by providing information to the public about what is happening and why. You can make sure that the community is fully protected by getting all of the shots they need when they need them through the use of family health cards shown on pp 174-175 of this Manual. (Note the immunization records on the Road to Health Chart will need to be modified according to local health needs.)

TABLE 1

PREPARING THE EDUCATIONAL COMPONENT OF A VACCINATION PROGRAMME

Some Factors Working Against Vaccination	Some Positive Factors Encouraging Vaccination
1. Diseases involved not known, diseases thought to be rare or unimportant or accepted as inevitable and so not feared	Disease known, recognized and feared
2. Vaccine believed ineffective	Immunization believed effective, to protect
3. Side effects feared or resented	Side effects knowns and accepted as contributing to immunization process
4. Health personnel feared, mistrusted or disliked	Health personnel known, respected and trusted
5. Unwelcome association at immunization center	Attends with friends and meets others. Welcomed and encouraged to cooperate
6. Time spent travelling, expense and effort involved	Effort, expense, etc., involved reduced to a minimum by programme design and felt to be reasonable in relation to benefits obtained
7. Distractions occurring simultaneously, e.g. market days, community activities	Programme utilizes community activities and celebrations — avoids unsuitable occasions
8. Child thought to be unwell or weak	Advice of health staff on child's condition desired and accepted
9. Obligations to family. Family lack of sympathy with programme	Family support programme and both assist and encourage participation

You can try to get the people who attend the immunization clinics to bring in others who have not shown up because of fear, lack of knowledge, or other reasons. Consider using immunization programs as a means of expanding community interest in promoting good health in other ways such as with sanitary privies, clean water, nutrition, maternal and child health and other projects.

5. These are only preliminary thoughts. Try to get WHO's or your country's detailed guidelines regarding immunizations and health education. They will be available soon.

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Since 1961 when the Peace Corps was created, more than 80,000 U.S. citizens have served as Volunteers in developing countries, living and working among the people of the Third World as colleagues and co-workers. Today 6000 PCVs are involved in programs designed to help strengthen local capacity to address such fundamental concerns as food production, water supply, energy development, nutrition and health education and reforestation.

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